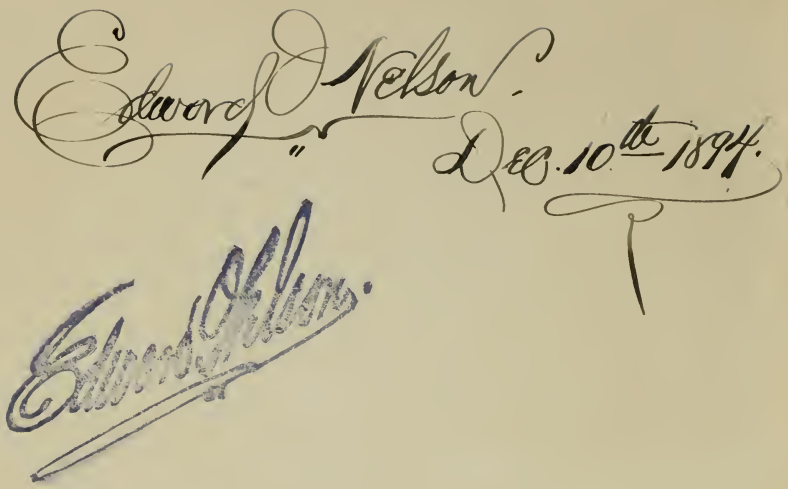

THREE PERIODS OF ENGLISH ARCHITECTURE.

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THREE PERIODS OF ENGLISH ARCHITECTURE

BY

THOMAS HARRIS
F·R·I·B·A· F·SAN·I·

B·T·BATSFORD
LONDON 1894

CHISWICK PRESS :—CHARLES WHITTINGHAM AND CO.
TOOKS COURT, CHANCERY LANE, LONDON.

PREFACE.

IN the following pages much is advanced which may justify the charge of lack of novelty. It is, however, the author's intention to be little more than "a gatherer and disposer of other men's stuff," his object being to advance the cause of architectural progress, not so much by enunciating his own views, as by showing how much has been said on the subject by others. This will explain the apparent abruptness of some of the quotations, they being, for the most part, introduced with little attempt at constructive arrangement, where they appeared to best elucidate the text, or to lend the authority of some well-known name to the proposition under consideration; but they will be found to form a kind of thought mosaic, each one either helping to strengthen, or in some cases to tone down, the others with which it is connected.

The progress herein alluded to has found many advocates at the Royal Institute of British Architects, and names of the highest repute are associated with it. Architectural publications, both here and in America, have frequently given expression to the longing for relief from the bondage to which the profession has been so long subject, and from the delusions which have militated against the clear apprehension of the destiny of their art.

The author is not actuated by any desire to assume a position in advance of that taken by many of his professional brethren, but rather to point out to them how far they are committed to a progressive policy in their art, and to invite them, as a body, in the words of many of their leading members, to consider the principles which, as shown in the following pages, have been on all hands so generally expressed, but which few, if any, have endeavoured to carry into practice.

It is doubtful whether the fact, that so little progress has been made in this direction, is to any great extent attributable to the opposition of the public, since they have in kindred matters gradually cast aside their prejudices, and become educated to accept the great changes necessitated by scientific progress.

It therefore appears but little likely that they would long oppose that development of architecture, which has for some time been the subject of so much thought and anxious solicitude, and which, if architecture is ever again to become a reality, must sooner or later be attempted in earnest by the profession. The engineer has adopted new materials and new constructive methods to meet the new requirements of his time; and though these at first met with considerable opposition, sentimental or otherwise, his perseverance has finally overcome every obstacle, and that engineering works should mainly be constructed in metal is now unquestioned. He has fought the battle for himself, and by his success has made comparatively easy, the task which the architect likewise, must nerve himself to accomplish.

The true awaking of architecture from the state of lethargy in which it has so long remained may probably be a slow process; but when fully attained, will consequently be the more enduring.

I take this opportunity of thanking numerous friends for their kind assistance, especially in suggesting works for reference; also Mr. J. A. Gotch for permission to reproduce part of the Entrance Front to Bramshill from his work, "The Architecture of the Renaissance in England."

THOMAS HARRIS, F.R.I.B.A.

6, SOUTHAMPTON STREET,
BLOOMSBURY, W.C.
June 30th, 1894.

AUTHORITIES CONSULTED.

E. M. Barry	"Lectures on Architecture."
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T. G. Jackson, M.A.	"Modern Gothic Architecture."
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J. Ruskin. . . . "Poetry of Architecture."
"Stones of Venice."
"Lectures on Art."

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J. D. Sedding . . . "Art and Handicraft."

G. E. Street . . . "Brick and Marble Architecture in the Middle Ages."
"Gothic Architecture in Spain."

H. Taylor . . . "Old Halls in Lancashire and Cheshire."

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"Dictionnaire Raisonné de l'Architecture."
"The Habitations of Man in all Ages."

Cardinal Wiseman . "What are the Prospects of Good Architecture in London?"

Bernard Whelan . . "An Architect in Exile."

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Papers and Discussions by the following:

G. Aitchison.
E. Ingress Bell.
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W. Emerson.
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Sir M. Digby Wyatt.

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"The Builder." "The Building News."
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"The Architectural Association Sketch Book."
"The Studio." "The Engineer."
"The Morning Post." "The Pall Mall Gazette."

LIST OF ILLUSTRATIONS IN THE TEXT.

PLATES.

ERRATA.

Page 15, line 16 from top, *for* "Longleats," *read* "Longleat."
Page 28, line 3 from bottom, *for* "Sheen," *read* "Cheam, Surrey."
Page 43, footnote, *for* "dadoes," *read* "hangings thus used."
Page 80, line 2 from top, *for* "of the Classic periods," *read* "without exception."
Page 110, line 9 from bottom, *omit* "the discovery of."
Page 174, line 15 from top, *omit* "although."

THREE PERIODS OF ENGLISH ARCHITECTURE.

FIRST PERIOD—AT WORK.

"If antique and Renaissance architecture fail to supply the needs of the nineteenth century because of imperfect construction and imperfect æsthetic development, mediæval styles do not supply modern needs because of a failure to express modern ideas, although their facilities of construction and their æsthetic possibilities would not make it very difficult, under the system as it exists, to reach a perfect representation of later ideas in those styles. Yet when the work is done, the resulting monuments would bear but little resemblance to mediæval monuments —at least not to the eye of the mere connoisseur in forms."—LEOPOLD EIDLITZ, *The Nature and Functions of Art, etc.*, p. 375.

AT WORK.

IT must have often been remarked, by those interested in the subject of the architecture of our country, by what regular steps the domestic plan was evolved; how gradually it was developed from the earliest type and had adapted itself to the progressive requirements of each period, one phase almost imperceptibly gliding into its successor; its onward course but slightly interrupted even by the troublous and stirring times which have made the sixteenth century famous in our annals. But whilst the plan continued to preserve its characteristics with but few modifications, allied to the style with which, up to the Renaissance, it was so closely associated, the alien style ultimately overcame the indigenous Tudor, and the anomalous adaptation of foreign features to the English plan was introduced. So familiar have we grown with this anomaly that we have become blinded to its incongruity; yet should we not be glad to see and welcome any attempt to return to the true principles of the style which grew with the plan, and which we are justly entitled to call our own. For some 250 years we have been doomed to gropé about among a chaos of styles, now inclining to one phase of classic, now to another, and even in our extremity to Egyptian and Chinese, and are now, in the latter half of the nineteenth century, seeking we know not what; a resuscitation of thirteenth century Gothic, Elizabethan, Jacobean, Flemish, Georgian, and so on; restless and dissatisfied, and painfully conscious of our shortcomings and errors, but, presumably,

without either the ability or the courage to free ourselves from the clutches of this deadening architectural "octopus." A man in the evening of life, contemplating the portrait of the wife of his youth, who died young, seems to afford an apt analogy of the relationship existing between the evolved plan and the petrified elevation. Compare the plans on Plate I. (*a*) Ground plan of Smithills Hall, Lancashire. (*b*) Ground plan of Stokesay Court, Shropshire, and Pooley Hall, Warwickshire, date 1509 (Fig. 1).[1] The reflection must have passed through many minds,—what

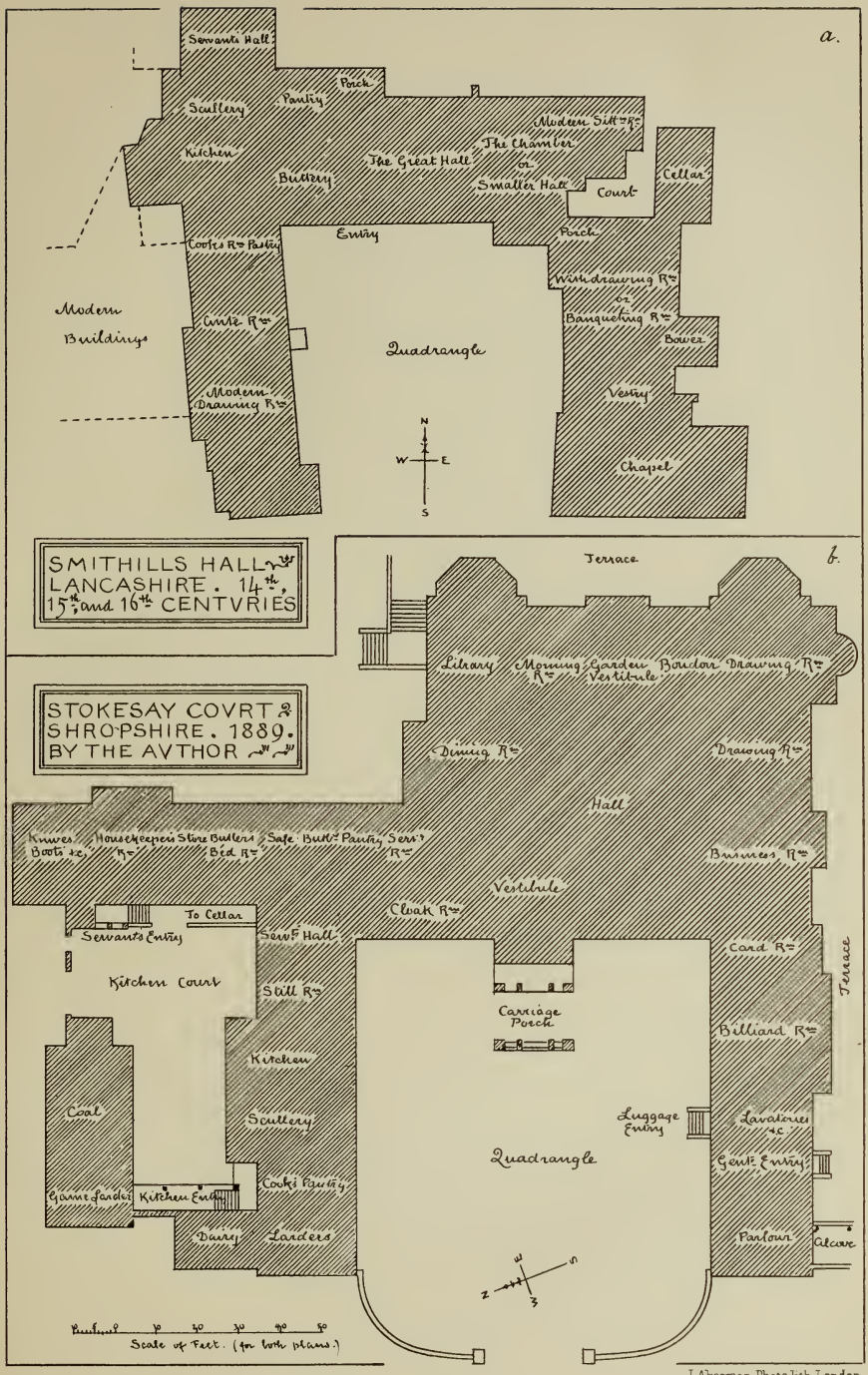
FIG. 1.

forms would the elevation have assumed through these intervening years? and, more especially, what form would it in all probability be wearing at this time had not the Tudor been supplanted by the Renaissance. Mr. Aitchison says:[2]

"Not only is the architect looked on by the public as a supplier of old fancy dresses for buildings, but too many architects are of the same opinion. The architect, in too many cases, is believed by the public to be like a comic actor whose business it is to parody all the expressions of former national character, from Greek to Chinese, and not to give expression to our own."

[1] "Illustrations of old Warwickshire Houses," W. Niven.

[2] "Lectures on Architecture," 1894.


a.
Servants Hall
Porch
Scullery
Pantry
Kitchen
Buttery
The Great Hall
The Chamber or Smaller Hall
Modern Sitting Rm
Court
Cellar
Entry
Porch
Cooks Rm
Pantry
Withdrawing Rm
Banqueting Rm
Bower
Modern Buildings
Quadrangle
Vestry
Modern Drawing Rm
Chapel
N
W
E
S
SMITHILLS HALL LANCASHIRE. 14th, 15th and 16th CENTVRIES
b.
Terrace
Library
Morning Room
Garden Vestibule
Boudoir
Drawing Rm
Dining Rm
Drawing Rm
Hall
Knives Boots &c
Housekeepers Rm
Store
Butlers Bed Rm
Safe
Butlers Pantry
Servts Rm
Bunners Rm
Vestibule
To Cellar
Servants Entry
Cloak Rm
Servts Hall
Card Rm
Kitchen Court
Still Rm
Carriage Porch
Billiard Rm
Terrace
Kitchen
Coal
Scullery
Luggage Entry
Lavatories &c
Quadrangle
Gentl Entry
Game Larder
Kitchen Entry
Cooks Pantry
Dairy
Larders
Parlour
Alcove
STOKESAY COVRT SHROPSHIRE. 1889. BY THE AVTHOR
Scale of Feet. (for both plans.)
J Akerman, Photo-lith London

In "The Habitations of Man in all Ages" M. Viollet-le-Duc says:[1]

"The Renaissance movement, which was a veritable intellectual revolution, by bringing into notice a very considerable and most important period of the past, of which Europe was entirely ignorant, this movement, I say, by the enthusiasm it excited in favour of classical antiquity among all cultivated minds, turned this part of the globe for a time out of its normal path of progress. Classical antiquity appeared so beautiful and perfect that it seemed desirable to stop at this point in human development, and to contract an indissoluble union with it. And admiration for that period of the past was at first confined to its form."

The speculative character of the thought is undeniable, and yet it opens out such a vista of what *might* have been, that it ought not to be altogether idle to reflect upon the causes which prevented a further development, and but for which we should have been in possession of a style which would have claimed unbroken descent from that of our forefathers, instead of being saddled with a foreign style unknown to them, or being under the necessity of seeking for the lost links which would make their glory ours. We do not know what form the sixteenth century Gothic would have assumed at the close of the nineteenth century had its development been uninterrupted, yet this is the problem the solution of which living architects would do well seriously to attempt, instead of vexing themselves with the questions which certain enthusiasts in the rival styles are said to have been in the habit of raising: "What would a mediæval architect have done with this?" or, "How would Sir Christopher Wren have treated that?"

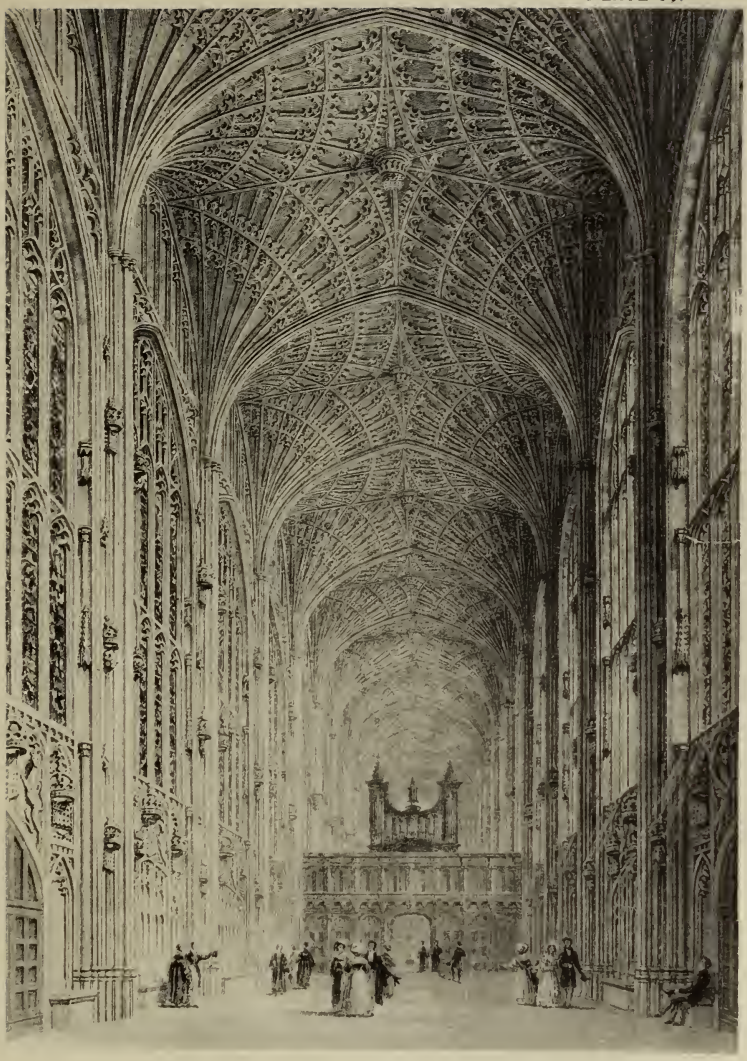
Doubtless it may be said that mediæval architecture was in the beginning of the sixteenth century hastening to its fall. But was it so? Was old age responsible for the end, or were there other and more potent influences at

[1] Conclusion, p. 392.

work which were instrumental in bringing about its destruction? There is much to be said on both sides, for it is so sadly true that the three stages of youth, completed growth, and decay, are the lot of most terrestrial things, that this natural sequence never surprises us. But in applying this law to Gothic architecture, it must first be proved to have entered the third stage, and a glance at its latest achievements does not sufficiently afford such proof; on the contrary, it gives grounds for believing that there were in it powers of further development. A style can scarcely be said to be moribund which produced Henry VII.'s Chapel at Westminster, and King's College Chapel at Cambridge (Plate II.);[1] never, surely, did decrepitude simulate vigour so successfully as in these and a hundred other examples, scattered up and down the land. It would be safer to say that Gothic architecture never reached this stage. A spurious imitation was in after years paraded as the genuine lost style; but no one could point to Strawberry Hill or Fonthill Abbey and say, "here is Gothic architecture in its decrepitude;" no one in the profession of architecture could even *think* of them as Gothic—such an idea would be only a degree more ludicrous than the productions themselves.

But, to repeat the question:—What form would its development have taken? Would it have been by the process of grafting, or would the style have budded forth naturally, by its own inherent life? One cannot yet conceive of the latter; but, in regard to the former, we are in a position to judge from the beginnings what the effects of life imparted might have been. Grafting is a process which, if not natural, is nevertheless one to which nature readily adapts herself, and that in a very remarkable manner. Allowing that Gothic art was allied to Italian by descent in

[1] Le Keux's "Memorials of Cambridge," vol. ii. (1847).



KING'S COLLEGE CHAPEL, CAMBRIDGE.

another line, what could be more in accordance with the fitness of things than that new vigour should be imparted to the old stock by the foreign graft? That good results have been effected in architecture by such means is amply proved

FIG. 2.

by the happy influences exerted by the French Gothic on our own national style in the time of Edward I., and on the Scotch Gothic at a somewhat later period.[1] See Fig. 2, a portion of the south aisle of Dunkeld Cathedral, built during the first half of the fifteenth century.

[1] "The Builder," January 6th, 1894.

The following quotation from the Cantor Lectures, 1893, by Lewis F. Day, gives his view, very beautifully expressed, of the meeting of the two styles, and the effect they produced on one another.

"It has been laid to the charge of the French King (François 1^er^) that he is responsible for the extermination of Gothic art. That is absurd. Living art is not so easily killed by any man, even though he be king. The utmost he did was to hasten on events. The truth is that the thread of Gothic tradition, weakened by the wear of three or four centuries or more, was already stretched to the utmost limits of tension; it was ready to snap at any moment when Francis came to the throne; but so far from its being true to say that he severed it, it might more fairly be averred that it was he who provided from afar, not only the strands of newer and stronger fibre, but the deft workmen to weave them into it—strengthening, for the time, and even preserving, the life of mediæval art, at the cost eventually, no doubt, of its identity."[1]

Contrast with this the following, from "Gothic Architecture," by William Morris:

"In the early days of the Renaissance there were artists possessed of the highest qualities; but those great men (whose greatness, mind you, was only in work not carried out by co-operation, painting and sculpture, for the most part) were really but the fruit of the blossoming-time, the Gothic period; as was abundantly proved by the succeeding periods of the Renaissance, which produced nothing but inanity and plausibility in all the arts."[2]

In "Lectures on Architecture" M. Viollet-le-Duc says:

"When the Germans—whose tribes have preserved a comparative purity of race—ceased, in the fourth century, to guard the frontiers of the empire, when, even allying themselves with the torrent of invaders from the north, they flung themselves upon the dead body of the empire, what has been called Roman art was lost, together with its political and administrative organization—since that art was in fact only one of the branches of this adminis-

[1] Lecture II. [2] Pp. 54, 55.

tration. However, these people of the north, whom we have been taught at college to call barbarians—to say nothing of their having performed a meritorious act, in the eyes of humanity, by coming to introduce young and vivacious elements where death was reigning—were destined, by this very contribution of a purer blood, to restore to the arts a distinctive character. If the Teutons, the Lombards, the Franks, the Burgundians, and the Goths were not artists when they came down upon Gaul, Italy, and Spain, it is not less certain that they introduced a very active ferment of art into the stagnant mud of the Roman Empire."[1]

In a paper published in the Transactions of the Royal Institute of British Architects, 1889, entitled "Some of the Differences of Style in the Old Buildings," Mr. G. E. Street makes the following remarks:

"The work of old architects owed not a little of its vigour to its variety; each man who had any inspiration did the best he wot of. . . . But the fact that so many men did this shows how infinite are the varieties of which Gothic architecture is susceptible, always in strict obedience to the true principles upon which it was founded."

And then he enumerates the causes of this variety: (*a*) the requirements of material; (*b*) the influence exercised by certain men; (*c*) spread of art-knowledge by Freemasons, religious bodies, etc.; and (*d*) attempts in one age to copy work done in a previous age. It was the last-named, principally, which was at work in the Renaissance, and to this "cause of variety" must surely be attributed no little of the vigour which was imparted to the Gothic.

As Mr. T. G. Jackson remarks in "Modern Gothic Architecture:"

"If such decorative work as this of the fifteenth and the early part of the sixteenth centuries, which is perhaps the best that the world has ever seen, is to be forbidden to the Gothic school; if it is really so opposed to Gothic architecture that it cannot possibly

[1] Vol. i., Lecture VIII., pp. 340, 341.

be combined with it; if only barbarous and imperfect design is suitable to Gothic architecture, perish the style; it is not worthy of a moment's attention."[1]

And here the other alternative remains to be considered, viz.:—Were there other causes more potent to bring about the fall of Gothic art? Did not that which should have stimulated it act more as an opiate, which finally locked it in its death-like sleep. In other words, was not the Renaissance, which might have served as a stimulus to its further progress, the means of its destruction?

But this antagonism between the two styles was not altogether a matter of outward form, the shape of an arch, or the profile of a moulding.[2] In the sixteenth century there was a change passing over men's minds, which was prompting them to throw over old associations because they were old, and embrace the new because they were new. For the future they would be content with outward forms, having for them no inward meaning—music without words—designed to tickle the senses, but to let the mind "go bare." We speak of antagonism, but of this there was practically none till about the middle of the sixteenth century. Foreign art had hitherto been treated as a welcome guest; the greatest compliment—that of imitation—had been paid to her. This dalliance with the fascinating foreigner was a dangerous game to play, for the bands of roses were soon

[1] Chap. iv., p. 123.

[2] "If it had been our habit to study such matters seriously—and I wish we were inclined to form such a habit—our architects would have soon discovered that mediæval art, applied to domestic as well as to every other kind of architecture, is not an affair of mouldings, or of the few commonplace forms with which antiquarian collections are occupied, but that it involves, first and foremost, a principle of freedom in the means of execution which can adapt itself quite as well to the requirements of mankind in the fourteenth century as in the nineteenth."—M. VIOLLET-LE-DUC, *Lectures on Architecture*, vol. ii., Lecture XIX., pp. 368, 369.

metamorphosed into chains of iron, and the generous and too confiding entertainer was soon ousted by the perfidious and insinuating guest.

M. Viollet-le-Duc gives the following account of the introduction of the Renaissance into France:

"At the close of the fifteenth century the nobility, on their return from Italy, prided themselves on their appreciation of art: they made it a subject of study, and the passion for Italian works led to the formation of that body of *amateurs* which has ever since had so powerful and injurious an influence on art. On their return the French *noblesse* desired to substitute luxurious abodes in the foreign style for their old chateaux and manor-houses; and dreamed of nothing but porticoes, colonnades, galleries, and symmetrical façades. The old Gallic artists, therefore, having completely exhausted all the resources with which the principles of Gothic art could furnish them, adopted the new tastes of their clients. In the thirteenth century it was the artists alone who had led the way in æsthetic progress; in the sixteenth century they accepted a style of art imposed upon them. But, adopting only a foreign exterior, they preserved the national genius in essentials; the edifices they built were still Gothic in general arrangements and structure; but to please their employers they arrayed the old body in a new dress, consisting of fragments borrowed from the Italian Renaissance. Since the ancient orders were called for, they adopted them almost exclusively as a mere decoration; the local flora was replaced by arabesques, and prismatic profiles by Italian mouldings. Jupiter, Venus, and Diana, with nymphs and Tritons, were substituted for angels, saints, and personages clothed in the costume of the day. The owners of the chateaux and manors were delighted; and the artists, who at that time had scarcely any firmer belief in angels and saints than in Diana or Mercury, were not less satisfied at being disembarrassed of the worn-out garb of Gothic art, which in point of form had reached the last limits of the possible. But the principles of art —those methods which were the outcome of many centuries of experience—these did not change; and the architects who were so ready to obey the fashion in exchanging their old Gothic ornaments for a dress of foreign importation, did not borrow from the Italians either methods of construction or general arrangements of

plan. They continued to draw Gothic plans and to construct like their predecessors, to cover their buildings with high roofs, to crown them with conspicuous chimney shafts, to build their porticoes low to afford shelter from the rain, to make mullioned windows, narrow and numerous staircases, build great halls flooded with light for large gatherings, and small apartments for daily use; to care little for symmetry, to flank the main buildings with towers or pavilions, to provide for defence, to detach the parts of their buildings from each other in case of need, and to proportion the windows to the apartments they were destined to light." [1]

Of course, modern Europe has much cause to be thankful for the Renaissance as a whole; but might not greater discrimination have been exercised in determining what might be permitted to pass away, and what had better be left as heretofore? Most would admit that religion, literature, and science, required a fresh impetus, which nothing but such a movement could give. The question is, was it so with architecture? Was it necessary when an English gentleman about to build, required an innovation such as a library (which, though not unknown, was a rarity), in order to incorporate this with the plan, he should of necessity change the style of the house? The church in matters ecclesiastical used largely the discriminating faculty, and whilst doing away with much that was corrupt, retained all that she considered of use, and although mistakes were doubtless made, yet the principle was right, and had it animated men's minds more in other matters, we should have had less cause for regret. But it was a craving for change for its own sake. That active agent of destruction which we call "fashion," was energetic to a degree, and was enslaving men the while it was deluding them with the idea that it was ennobling them; and men, ever ready to be ennobled in so easy and alluring a way, submitted

[1] "Lectures on Architecture," vol. i., Lecture VI., pp. 240, 241.

with more than good grace. If it were true that fashion was mainly responsible for most of the Renaissance that could be lived in or worn ; all that could flatter vanity and minister to luxury ; then, to that extent, we should have been better without it. If it had used its opportunity of supplying new ideas and imparting additional aims, in a way which would have placed it above suspicion of plotting to supplant and destroy, it would have been an unmixed blessing ; but this it failed to do. We cannot accept the styles consequent upon its introduction as anything like substitutes for that which it eventually supplanted.

And yet considerable allowance should be made for this fashion craze at that time, for if ever it were pardonable it surely was then, when men were beginning to feel the first pulsations of modern thought. There was a sense of freedom in the air, and was it to be wondered at, that this foreign work was associated in their minds with the coming good ? They could not separate the two ; and since they had made up their minds as to the desirability of the one, they were eager to surround themselves with the other, which must have appeared to them as the symbol of it.[1]

It is in this light that such a passage as the following must be read :

"With the last two in England (Henry VII.'s Chapel and King's College Chapel) ended the real domination of church

[1] "This great change (the Renaissance), I say, was necessary and inevitable, and on this side, the side of commerce and commercial science and politics, was a genuine new birth. On this side it did not look backward but forward : there had been nothing like it in past history ; it was founded on no pedantic model ; necessity, not whim, was its craftsmaster.

"But, strange to say, to this living body of social, political, religious, scientific New Birth was bound the dead corpse of a past art. On every other side it bade men look forward to some change or other, were it good or bad : on the side of art, with the sternest pedagogic

over state; with the cessation of this domination the principles of mediæval architecture began to lose their ascendancy over the national mind."[1]

It is a fact that this cessation did take place at that time, and these two productions of the Perpendicular period were synchronous with it, and in the minds of men might, in a sense, have been typical of it, but nothing more.

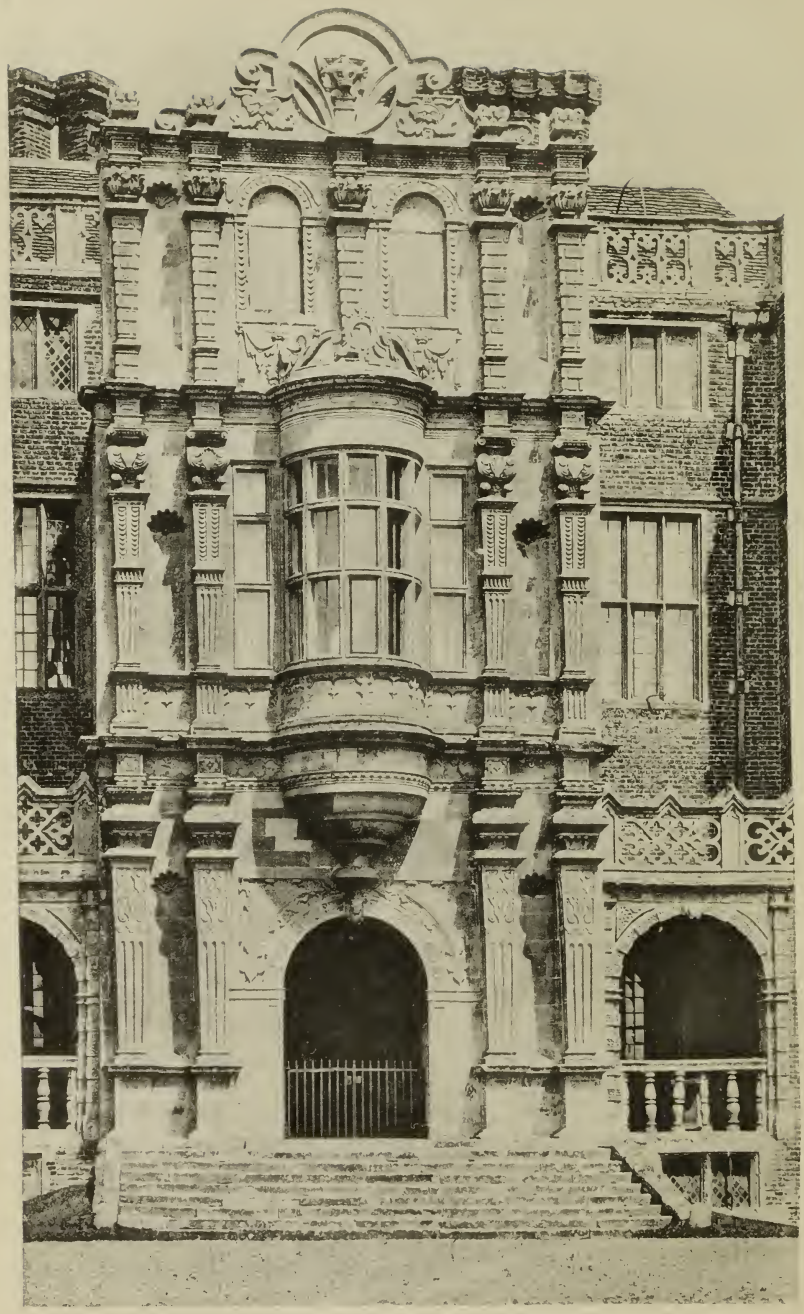
Mr. Freeman says, in his "History of Architecture," page 426:

"I cannot but think that too much importance has been attached to the religious changes of the sixteenth century, and more especially to the dissolution of monasteries, as direct causes of that change in architecture which, in England, happened to be contemporaneous with those events. That they cannot be the universal solvent it is clear from the fact that the change occurred in Italy one hundred years before the Reformation, and that architecture became fully as much corrupted in Roman Catholic as in Protestant countries, or in England."

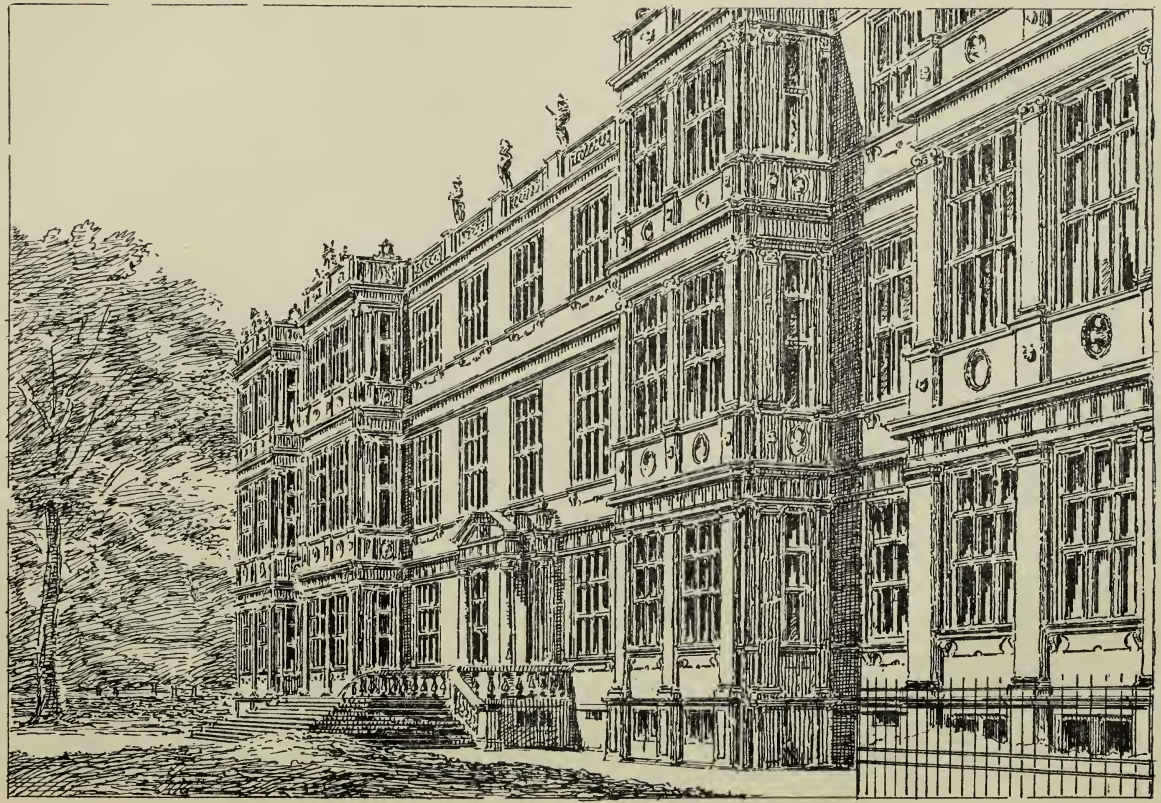
It can hardly be necessary now, to combat prejudices against Gothic which have almost ceased to exist. It was urged that it was an ecclesiastical style *per se*, but as stained glass—one of its chief characteristics—is now used

utterance, it bade men look backward across the days of the 'Fathers and famous men that begat them,' and in scorn of them, to an art that had been dead a thousand years before. Hitherto from the very beginning the past was past, all of it that was not alive in the present, unconsciously to the men of the present. Henceforth the past was to be our present, and the blankness of its dead wall was to shut out the future from us. There are many artists at present who do not sufficiently estimate the enormity, the portentousness of this change, and how closely it is connected with the Victorian architecture of the brick box and the slate lid, which helps to make us the dullards that we are. How on earth could people's ideas of beauty change so? you may say. Well, was it their ideas of beauty that changed? Was it not rather that beauty, however unconsciously, was no longer an object of attainment with the men of that epoch?"—W. MORRIS, *Gothic Architecture*, (1889), pp. 51-53.

[1] "Sessional Papers, R.I.B.A.," 1868, Sir M. D. Wyatt.



BRAMSHILL, HANTS.



J. Akerman, Photo-lith. London

LONGLEAT, WILTS.

in most gin palaces, to say nothing of suburban villas, these prejudices seem to be giving way. Many still object to Gothic as being, in what they are "pleased to call their minds," connected in some way with feudalism, as a symbol of oppression, a badge of slavery, the fitting dark and gloomy abode of ignorance and superstition.[1]

A considerable time elapsed before the love for Gothic passed away, and for many years the spirit which animated the national style, and the principles which governed it, still lingered on ; and even when the outworks were giving way under the attack, the predilection for the new style, as filtered through northern minds (those of Germany and the Netherlands) was apparent, and to the average Englishman there could be but little doubt that more of the spirit of Gothic was retained in Bramshill House, Hants, date 1605-12 (Plate III.)[2] than in Longleats House, Wilts, 1567[3] (Plate IV.). Henry VIII. never freed himself from his national proclivities, even when patronising the new style, and this natural bias in favour of Gothic must have made him a veritable "thorn in the flesh" to his Italian advisers.

The following is a humorous history of the transition in epitome by Professor Kerr in "Newleafe Discourses:"

"One Torregiano, having flattened the nose of one Michael Angelo Buonarotti with a certain mallet (value unknown) in the garden of one Lorenzo de Medici at Florence, was banished forthwith for the deed; and Marcus Vitruvius Pollio became a ruler in these our realms of Britain in consequence thereof. It would

[1] It is curious to note that the same generation which had freed itself from the fetters of Romanism should have adopted the style of architecture which at that time was, and since has been, closely associated with it. Let those who see any such connection as is suggested in the foregoing quotation from Sir M. Digby Wyatt explain this.

[2] This house stripped of the foreign elements would be, in reality, Gothic. Gotch's "Architecture of the Renaissance in England," vol. ii. (1894).

[3] "Building News," July 21st, 1882.

appear that Henry VII.'s tomb was the first cinquecentist attempt in England. Then we skip a century; Mr. Bull wouldn't have it. He preferred his own Tudor; and the utmost he would allow (Mr. Bull was a sensible person, but stubborn in his own way) was a sort of slight concession which we call Elizabethan. But that Mr. Bull wore away at last. And indeed his opposition was but poorly effective; for his Elizabethan is scarcely to be admired, except as the honest perseverance of the genuine Englishman fighting from pillar to post, and from post to pillar, in defence of what he 'considers his duty.' He held out (as he always does)—he held out bravely so long as the fortifications stood (whatever is is right till it tumbles down of sheer rottenness); when he could hold out no longer he gave in like a man,—and Inigo Jones, in fulness of glory, with 'five yards of broadcloth for a gown at twenty-six shillings and eightpence the yard; one fur of budge for the same gown, price four pounds; four yard and a half of baize to line the same, at five shillings the yard; for furring the same gown, ten shillings; and for making the same, ten shillings.' Inigo Jones with 'Fee 36li. 10*s.*; one Clearke at 6*d.* a day. Expenses when he rideth at 4*s.* a day. Bote hire at 20*d.* a day,' and all the rest of it. Inigo Jones, Italy fairly conquering at last, was 'Surveyor of the Workes' to young Mr. Bull, and the leader of architectural taste."[1]

That the influence of the Renaissance was inevitable must be conceded, and that as a consequence, architecture would bear the impress yet, the result not necessarily being an impure, debased style. Literature was enriched by this influence; and architecture, by the same means and to an equal degree, might have benefited by it, had the leaders of that art been as much in earnest as the literati. The change, as has been admitted, was inevitable, but it does not follow that the results, as we see them, were so. If the king and other patrons of the art had clung more tenaciously to the old style, only admitting the influence of the new one, stopping short of adopting its characteristic features; if they had sedulously persevered in the path

[1] Chap. vii., pp. 119-20.

upon which they had entered, how much better might not the results have been.

"Taking it altogether, the English have perhaps some reason to be proud of their Transitional style. It has not either the grandeur of the Italian, the picturesqueness of the French, nor the richness of detail which characterized the corresponding style in Spain; but it is original and appropriate, and, if it had been carried to a legitimate issue, might have resulted in something very beautiful. Long before, however, arriving at that stage it was entirely superseded by the importation of the newly-perfected Italian style, which in the seventeenth century had pervaded all European nations."[1]

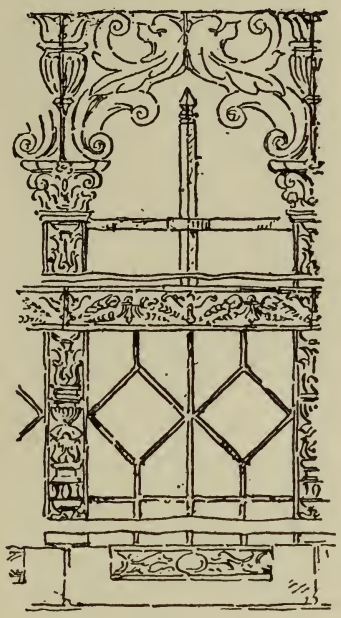


FIG. 3.

If, instead of abandoning the buttress for the attached column and pilaster, they had subjected it to a modifying process; if, instead of discarding tracery, such treatment of it as was initiated at Layer Marney[2] (fig. 3), date 1520, and was practised in much contemporaneous French work, had been adopted and adhered to; or if, instead of borrowing the entablature and balustrade, the pierced parapet, water-tables, richly decorated friezes, strings, etc., had been retained and treated in some such way as was feebly attempted at Sutton Place (fig. 4), date 1523, would not the old style have been living now?[3] Look at the

[1] "History of Architecture," vol. iii., book v., p. 255.
[2] "The Builder," April 10th, 1886.
[3] "Annals of an old manor-house."

pediment, which is responsible for doing so much to Italianize Gothic, how entirely unsuited it is to the old style, which possessed nothing to which it responded! So

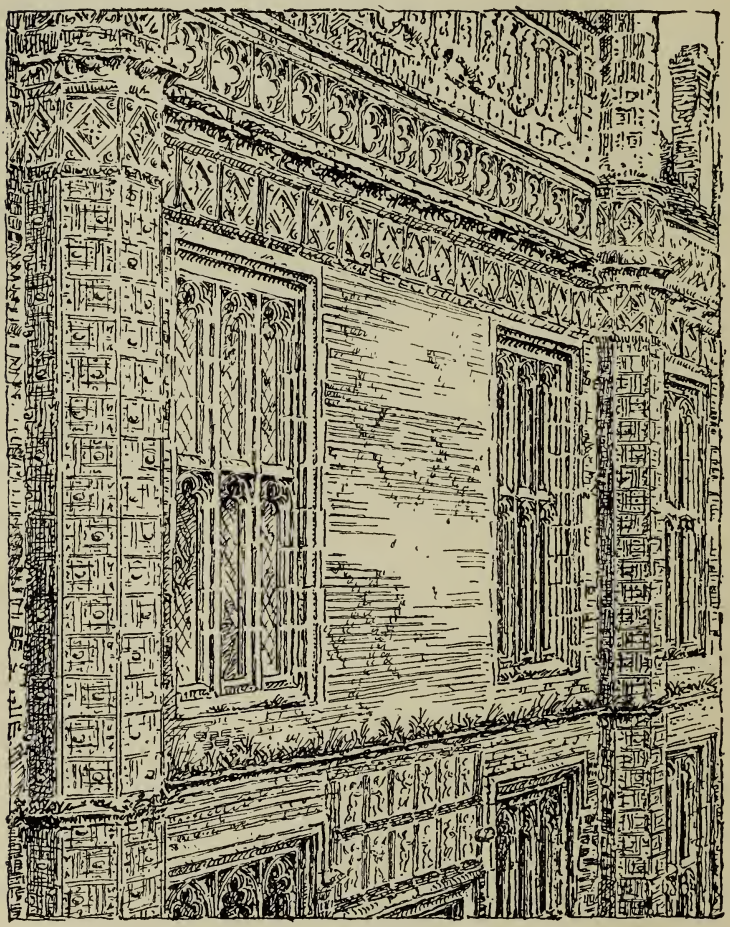


FIG. 4.

little in harmony is it with a Gothic building, that the only forms of it which seem proper to use—or, to give the sentence a turn—not improper to use (and this was tacitly

acknowledged in the Renaissance), are those so vehemently condemned by Sir W. Chambers in his treatise on "Civil Architecture." In fact, the attempted amalgamation of styles which took place towards the close of the sixteenth century, resulted in an incongruous mixture of antagonisms —an architectural "olla podrida," which would never have been witnessed had the path entered upon by the initiators of the Gothic Renaissance, been fearlessly followed.

Professor Donaldson, in the discussion on the paper read by Sir M. D. Wyatt, and before referred to, made the following remark :—"It appears to me that it was impossible —absolutely impossible—for England to remain behind the nations of the Continent, retaining its mediæval propensities and preferences, but it was obliged to adopt the new style prevalent throughout Europe." This might be true; but was the way in which this was done the only one that could be pursued? Surely not; for a way was found of submitting to the inevitable, without sacrificing national predilections and insular customs, and this was the one which, at the outset, was entered upon.

The struggle, which was for a time stoutly maintained, gradually relaxed, becoming weaker and weaker, until it was finally abandoned, and then came the deluge. No style worthy of the name, immediately succeeded; the nation, having clouded its vision by following strange architectural gods, became as unable, as it was unwilling, to work in the glorious style it had inherited, and which apparently still possessed life and energy.

In how short a time the art of Gothic architecture became debased is evident from an early post-reformation restoration, the chancel of Bareham Church, Suffolk, rebuilt in 1633 (fig. 5), where the external face of the east wall is pierced by a pyramidal topped window; the whole of the wall from plinth to coping is covered by a plain lozenge

reticulation, those portions occurring within the lines determined on for the window being left void and glazed.

The modern phraseology used in connection with this

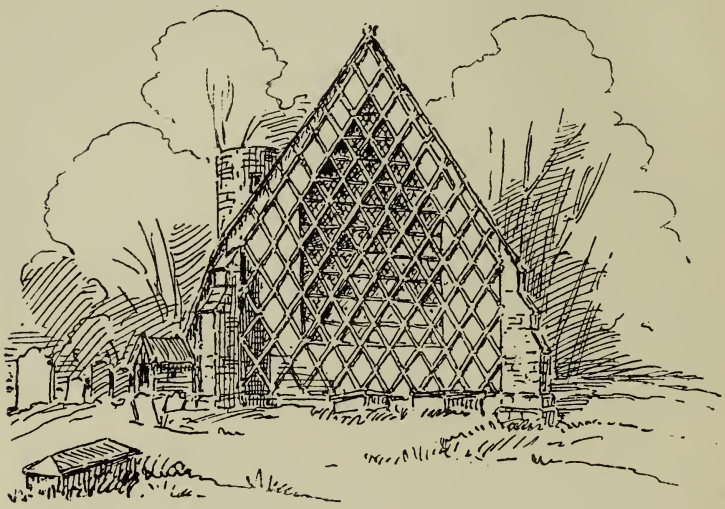


FIG. 5.

subject indicates a looseness of thought which might have had its counterpart in the sixteenth century. Were such the case it would serve to show that the contest was given up long before the battle was fairly won. A modern writer asserts that the breaking up of the sky-line, which, as he states, is one of the greatest charms of the Renaissance, was *borrowed* from the Gothic, whereas the right way of expressing it is, that the sky-line was one of the features which the Renaissance did not molest. It was not that Gothic features were being introduced into Italian buildings, but *Italian features into Gothic buildings.*

A naïve instance of the perversion of thought above referred to is to be found in a brochure by Mr. James Hakewell on "Elizabethan Architecture," published in 1838, in which he says:—"But, in England, where the

Gothic had so long obtained, it could scarcely be expected but that some portions of that style would *insinuate itself* (*sic*) into designs," etc., as though the Italian were not the intruder! And further on he adds :—" During the passage of the public taste from Gothic to the Italian, some portion of the former style would *insinuate itself*, and mar by the unnatural conjunction the character of each." But he failed to see that, as Gothic had "so long obtained," it was surely the Italian which had insinuated itself, and, admitting that the conjunction *was unnatural*, the very presence of Italian architecture in this country was equally so ?

To quote yet another instance of this—with all deference be it said—where we should not have expected it, viz., in Sir G. G. Scott's work "Gothic Architecture, Secular and Domestic," where, in speaking of the perpetuation to a late period of the Gothic arch in buildings of lesser importance, he says :

"It [the 'Elizabethan' style] produced beautifully simple, yet perfectly architectural, cottages for the poor; appropriate and comfortable farm-houses; and pleasant-looking residences for the smaller country gentlemen, and for the inhabitants of country towns and villages. In these the faults of the style rarely show themselves; the parts are always simple and natural, the leading forms the same as at the best periods, and the 'Classic' admixture is not obtrusive, being only seen in the profiles of the few simple mouldings." [1]

Here the author is really referring to *Gothic houses* slightly affected by the alien style; but he has drifted into thinking of them as Renaissance, and the reader is likely to infer from his remarks that these houses were erected by the builders in the style of the Renaissance; but, the "Classic admixture" not being "obtrusive," they in reality differed very little from houses erected during the Gothic

[1] Chap. i., p. 4.

period.[1] Wollas Hall, Worcestershire (fig. 6), date 1536, is a house of this description, where the only foreign features are the entablature, pilasters, etc., of the porch.

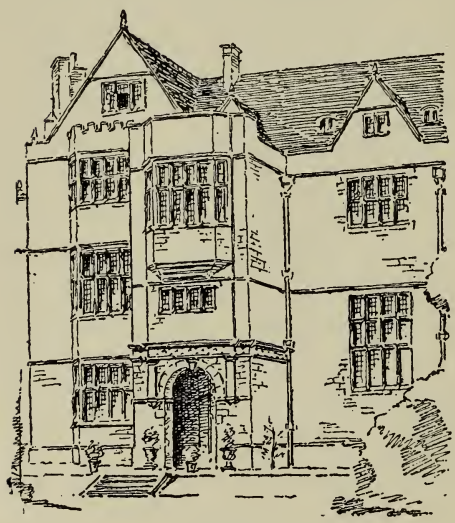


FIG. 6.

With reference to some of our old mansions, Mr. Fergusson, in his "History of Architecture," says:

"This class of buildings" (Hatfield House, Holland House, etc., etc.) "can hardly be called Classic, or even Renaissance, in the sense that we apply that term to continental buildings. It is only here and there that we are reminded, by a misshapen pilaster or ill-designed arcade, of a foreign influence being at work; and these are so intermingled with mullioned windows and pointed gables that the buildings might with equal propriety be called Gothic, the fact being that there is no term really applicable to them but the very horrid, though very characteristic name of Jacobean. As designs, there is really nothing to admire in them. They miss equally the thoughtful propriety of the Gothic and the simple purity of the Classic styles, with no pretensions to the elegance of either. All they can claim is a certain amount of picturesque appropriateness, but the former quality is far more due to the centuries that have passed away since they were erected than to any skill or taste on the part of the original designer."[2]

Mr. J. D. Sedding, in his "Art and Handicraft," speaks thus of Wadham College, Oxford:

[1] "Building News," October 28th, 1881.

[2] Vol. iii., book iv., pp. 252, 253.

"Wadham is the only college in Oxford which bears signs of alien influence; the rest of the buildings of the city are of harmonious character. It doesn't matter *when* the building was erected, it is Oxford architecture; it doesn't matter *who* schemed the plan, the superstructure is Oxford architecture in detail and character. A severe test was put upon the workshops in this matter of consistent localism in that vastly interesting phase of sixteenth and seventeenth century work, of which Oxford has so many examples, when the travelled patron with classic tastes desired to rear buildings in the Italian manner. But the patron did not carry the workmen with him very far, in spite of all persuasion the local workmen stuck to English traditions. Home rule prevailed."

Referring to the subject again he says:

"Cinque-cento buildings exist, of great magnificence, and even great beauty, but all their beauty is derived from the Gothic vestiges which linger about them, and give them, at a distance, the appearance of pure Gothic structures. It is clear that, could their details be at once converted into others more harmonizing with the prevailing idea, their beauty would be infinitely enhanced."

Mr. Street, more feelingly than Mr. Hakewill, refers to the mingling of the two styles, when, in speaking of the stalls of San Zenone at Verona, he says:—"They are of early Renaissance character, with some relic of Gothic feeling in the traceries of backs and elbows"—a most felicitous mode of suggesting the reluctance of the Renaissance workmen to forsake all the noble traditions of the past, and his lingering affection for that style, which was so soon to be eclipsed by the rising beams of the revived Roman. Here there is no suspicion of the repellent idea of "intrusion," which suggests not only apathy, but a positive and wilful rejection and dislike of the supplanted style. Which of the two ideas is most in accord with the best part of our nature—one lovingly clinging to the past till time had effaced all its memories; the other treating it with contempt as a despised thing, to be forgotten and buried

without remorse or a single kindly thought? It is not difficult to decide.

It is very delightful and refreshing to meet with an old house of this period, with its wealth of colouring, and with its English environment, but nature invests man's handiwork with these charms, be it good or bad, and her time tints are lavished even on the shapeless stone. We are aware what dubious praise Mr. Ruskin has bestowed upon these buildings; but, with all deference be it said, it seems to us that in the chapter on the "Poetry of Architecture," to which we refer, he presents "Elizabethan" in the very undignified character of clown wearing the cap and bells:—"It is a humorist, an odd, twisted, independent being, with a great deal of mixed, obstinate, and occasionally absurd originality. It has one or two graceful lines about it, and several harsh and cutting ones; it is a whole which would allow of no union with any other architecture," etc. Was this the best that the Renaissance could do? As for Mr. Ruskin's "points," they are more characteristic of Gothic than of Italian, and could all have been embodied quite as well in a Gothic house.

There were three ways in which Gothic could have been influenced, one only of which could be successful. First, by infusing into the Gothic forms, the spirit of the Italian, which was actually attempted at first. Secondly, by applying bodily, Italian forms and features, which practice was adopted later on; and, thirdly, by some such operation as that which had its birth in the fertile brain of Batty Langley, who, finding the articles of his faith in Vitruvius, devised the plan of squaring the Gothic creed to them, which, had he been successful, would have made columns of twenty or thirty diameters in length for evermore impossible. The first of these methods is the only rational one. An illustration of the working of this occurs in one

of the Sessional Papers of the Royal Institute of British Architects, 1892) read by Mr. Starkie Gardener, where, in speaking of the celebrated Hampton Court ironwork attributed to Huntingdon Shaw, but which was the work of a Frenchman named Tijou (1693), he remarks:

"Tijou's work was richer and more florid than that which was then being executed in England, but instead of permanently changing our style, its influence, though great at the time, passed away and was absorbed, leaving our designs in the reign of Queen Anne very much what they were under Charles II."

This is as it should be, a proceeding as simple and as natural, as mixing blue and yellow to produce green. And again, in his handbook on "Ironwork," in referring to the Danish invasion, and the influence exerted by the introduction of ironwork for which the Danes were celebrated, he says:

"As the accident that Greece was the meeting-place of the arts of Assyria, Egypt, and Asia Minor in Homeric days led to the magnificent Greek development of art, so the convergence of such dissimilar styles into a single focus in the hands of a new and vigorous English race appears to have led to a departure which bore important fruit."

There are many examples which may be seen in the canopy work of painted windows, in monumental work on tombs, chapels, screens, etc., which amply prove the possibility of this process,[1] as in fig. 7, a portion of the tracery from the "Spring Pew, Lavenham church, Suffolk."[2] The second method could never have developed a serious style,

FIG. 7.

[1] Byzantine architecture as the result of a fusion of Eastern and Gothic art affords a similar instance.

[2] "The Builder," August 30th, 1884.

although it was eminently fitted, according to Mr. Ruskin, to evolve something ludicrous—the "fool of the school," and as for the third, it would so have shocked the susceptibilities of both Gothicists and Classicists, as it did in Batty Langley's day, that it would have been killed by ridicule. To ascertain whether what has been said is borne out by fact, it will be necessary to glance briefly at the movement from its inception.

The first Italian work with which our forefathers must have become acquainted was in the form of portable articles brought home by travelled men, to be followed by others on a more extensive scale imported by chapmen in the way of trade; and these, by being dispersed through the land, gradually habituated the people to seeing national and foreign art in juxtaposition. The literature, which very early found its way westward, tended greatly to make the minds of the people receptive of the new influence. Not to like, or profess to like, Italian in those days, was to argue oneself "untutored;" and the Italian chest or Flemish arras certainly did give an air of superiority, not to say solid comfort, to the lady's chamber, which the home-made furniture failed to impart—failed, not because it was incapable of giving it, but because the habits of the people being simple and their wants few, no development had taken place in that direction, but the taste once formed, these things soon became indispensable. Dress soon came under the influence of the change, and the only thing which remained out of harmony was the old-fashioned architecture. It is therefore no matter of surprise that, when a new building of any importance was contemplated, an endeavour should be made to assimilate it to the prevalent taste thus generated; and, in this way, it would gradually come about that with more or less success, oftener the latter, the desired result was effected. As a matter of

course this took place first of all in such minor parts as mouldings, which were peculiarly susceptible to the first influence, as here the late Gothic builders were at their weakest, and in seeking for new forms they had, in some cases, even harked back to earlier sections, when lo! this mine of wealth was opened up ready to hand. Another consideration is that as the ornamental features were affected before the structural, by adopting the enriched forms of mouldings, additional ornament could at the same time be obtained. An instance of this occurs at Layer Marney, where the egg and dart moulding is used with purely Gothic ornament. See fig. 8, date 1520.[1] But it was not long before these unsophisticated attempts were abandoned for more daring flights, and we find Italian ornament in the shape of arabesques, panels, etc., boldly incorporated with the

FIG. 8.

[1] "The Builder," April 10th, 1886.

designs with a considerable amount of picturesque effect, but most barbarous as art, judged by either a Gothic or Italian standard. And so the leaven worked until towards the close of the reign of Henry VIII. the Renaissance commenced in earnest, and everyone was prepared to

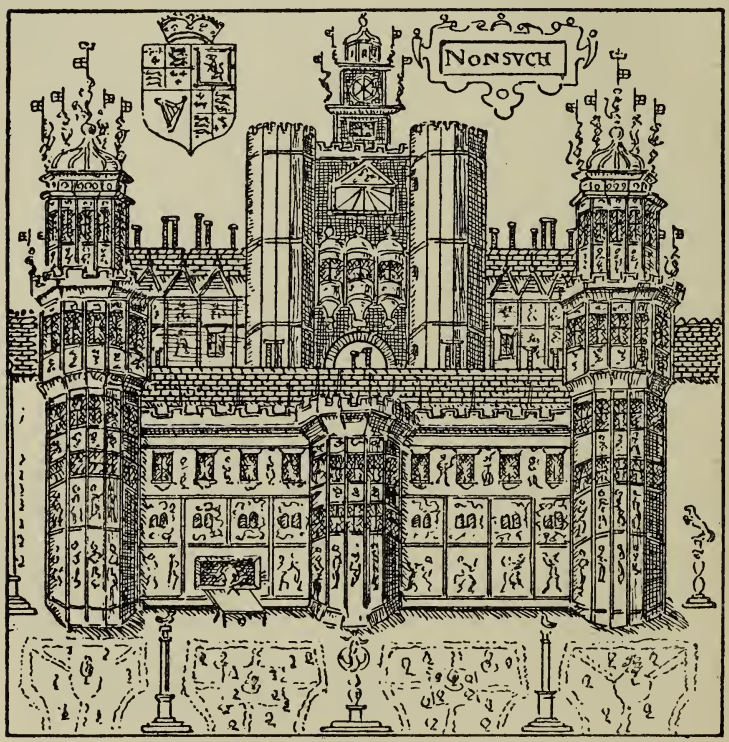


FIG. 9.

acknowledge its supremacy, and ultimately to submit to its sway.

"Nonsuch Palace," near Sheen (fig. 9), built by this monarch, and commenced about 1540, affords a good illustration of how he and his Italian advisers made a serious at-

tempt to animate the Gothic architecture by some of the spirit of the new style; for "Nonsuch" was essentially a Gothic building in spite of its having been referred to as "a fantastic toy." It was quadrangular in plan; some portions were built in stone, but the principal part of the palace was in half timber work; the roof was slated; there were bay-windows and embattled parapets;[1] towers, pinnacles, and tall stacks of chimneys broke the sky-line, and so far all appears English of the Tudor period; but when we are further told that the timbers were covered with slate[2] and sheet lead, that gilding was profusely used, that the usual plaster between the timbers had given place to stucco panels, modelled with figures in relief and coloured,[3] we

[1] These embattled parapets afford a very striking example of a feature being retained, which one would have expected to become obsolete, consequent upon the application of a new material in the place of that hitherto employed. How soon these lead-covered timber parapets would have been supplanted by some other feature more in harmony with the prevailing notions of architectural propriety, we cannot say. Judging from the universal practice of clinging to old forms, they would no doubt, had the style survived, have been, in some modified form, embodied in it.

[2] This use of slate was common in France in the sixteenth century. See Viollet-le-Duc, under "Ardoise."

[3] The practice of applying colour externally could not have appeared strange, our ancestors were perfectly familiar with it. That such colouring, which has long been destroyed, then existed is more than probable, such, for instance, as that of the Rose Tower at Windsor, which, in the opinion of the historians of the Castle, formed from the accounts of the materials used in 1366, "and from independent evidence that the external decoration of buildings, by painting them, was in vogue in this age, it seems evident that this tower was painted externally in imitation of the flower from which its name was taken," and with which, and much more of a like kind, the king would be familiar ("Annals of Windsor," by R. R. Tighe and J. E. Davis, vol. i., chap. viii., p. 179). Mr. W. Morris observes that, "in the Gothic building, especially in the half century we have before us (the end of the thirteenth century), every part of it, walls, windows, floor, was all looked on as space for the representation of incidents of the great story of mankind, as it had presented itself to the minds of men then living; and this space was used with the greatest

feel that we are on the eve of a change, and that a serious attempt was being made either to un-English the national style—which view the Italians would probably have taken —or to enrich it with new ideas, which would have been the view adopted by the king. It would be extremely interesting to see better drawn and more realistic representations of the building than we get in either Hoefnagel's print, or in that of Iodoc Hondius ; but enough is shown, supplemented by Evelyn's description, to prove that it was a step in the right direction. It must have been glorious in colour, a charm which the Renaissance builders ultimately rejected, and mainly to this fact our modern colourless architecture is to be attributed.[1]

frankness of prodigality, and one may fairly say that wherever a picture could be painted, there it was painted" ("Gothic Architecture," pp. 43, 44, 1893).

[1] As an instance of the effect produced on the mind by want of colour, the following extract may be given from the very interesting and useful, "Journal of the Clerk of Works Association" for May, 1893. It is more to the point, as it appears to be to a certain extent unsophisticated, the writer only mentioning the subject of colour incidentally in an article on "Building Stones:"—"I have been for years living in a stone district in the north, where the palatial warehouses, mills, and public buildings were all of stone, as also were the residences of the wealthy and the cottages of the workmen, giving to the districts around a cold and cheerless aspect. I have often looked at some of the great stone buildings of the district of which I speak, and sighed for just a little colour and warmth. Before leaving this part of my subject I should like to say that many of the buildings referred to seem to have been designed by architects who evidently entered into the cold spirit of the thing, for their designs seemed as sharp, angular, and fierce as the stone was dull, grey, and cheerless." And this embodies the spirit of many of the phases of modern architecture which claim to be of Italian parentage. Palladian, for instance, with its ostentatious purity, fully exemplifying what Mr. Morris rightly calls, "the cant of beauty and simplicity (*i.e.*, bareness and barrenness)." Mr. Loftie proudly claims for "the learned architectural style" that the strict rules of proportion laid down saved the architect who failed in genius from committing any gross error, so that we are indebted to these learned styles more than we were aware.

Did not the style of the house better lend itself to this method of decoration than would have done a stone or brick construction, by providing the most suitable grounds with so many frames for the figure subjects; and could a better mode of decoration have been suggested for the filling in of these panels?

Upon this subject Mr. Fergusson remarks as follows:

"Waiving for the present all criticism on the merit of the paintings which adorn the Sistine Chapel, and assuming only that they were carried out as originally designed by the artists who painted the pictures on the wall, and waiving also all question as to whether King's College Chapel is or is not a good specimen of Gothic art, the comparison of the two buildings fairly raises the question between the two styles, in so far, at least, as interiors are concerned.

"Is it better that a building should be ornamented from floor to ceiling with paintings appropriate to its destination, or that it should depend on constructive and architectural details only for its ornamentation? Is it expedient to apply the resources of the highest of the æsthetic phonetic arts to this purpose, or to depend only on an æsthetic form of the technic art of architecture to accomplish this object?

"Theoretically, it is easy to answer that the first is the highest and, consequently, the best; and if the Italians had fairly carried out what they so successfully commenced, it is tolerably clear that the question would never have been afterwards raised, and that painting, and that alone, would have been applied to the highest class of internal decoration. The introduction, however, of inappropriate classical architecture into their interiors, and the abandonment in a great measure of the principles on which the Arena and the Sistine Chapels were designed, has so vitiated the question that it is not so easy to decide it now. In the meanwhile, it will probably be admitted that a wall divided into compartments and adorned with paintings designed for the place they occupy, is a higher class of ornamentation than can be obtained by any mere structural form."[1]

The practice of some of the French Renaissance builders,

[1] "History of Architecture," vol. iii., Introd., sec iv., p. 14.

who translated, almost form for form, the half timber house into one built of stone, cannot be commended, but *many* examples suggest that the old half timber style probably gave the *motif* for a stone treatment, which, without imitation, would have been well adapted for the display of these panel decorations.[1]

This stucco work, so essentially Italian in its origin, seemed likely to be one of the principal means by which Italian art could inspire the Gothic with new ideas, and give to it a new departure. Nothing could have been more legitimate than this treatment of the panels at "Nonsuch." Plaster panels had been used with timber framing for years, but it was not so general to decorate them by modelling and colour, nor could it be any debasement of the style to use them both in this way.

Terra-cotta is another material which might be used in this or in similar ways, as at the Chateau de Boulogne (Chateau de Madrid), a stone building, where it was enamelled, and was certainly better able to stand the weather than the painted stucco panels of "Nonsuch," which Evelyn regrets were not placed under cover to protect them from decay.[2]

The success of this treatment of plaster work externally doubtless gave an impetus to its more extended use internally, and how interesting it would be to trace the involved patterns of the enriched ceilings of this and of later dates to the ribbed and traceried vault, especially to the fan tracery of the later work, which, with the "Cinquecento" ornament, often go to make up the *tout ensemble* of the "Elizabethan" ceiling. Is it not apparent that, if development in this direction had continued on Gothic

[1] See illustration, Viollet-le-Duc, "Dictionnaire," vol. vi., p. 271, article "Maison."

[2] See Viollet-le-Duc, "Dictionnaire," article, "Brique," vol. ii., p. 251.

lines, better results would have followed? Had the Gothic element never been eliminated from the plastic art, it would not have gone through the down-grade phases which we find it doing in after years. And as to the figure (and this applies to wood and stone carving as well as to modelling in plaster), it appears that the time was not yet ripe for any deviation from the Gothic type; and how miserably the attempt to Italianize the figure failed, through the inability of the native workmen to grasp the foreign idea, is exhibited in the travesties of the Jacobean period, which, with rare exceptions, were almost puerile in conception and rude in execution. The workmen had severed themselves from the old school, and had failed to get within a measurable distance of the new (compare *a* and *b*, fig. 10).[1]

a FIG. 10. *b*

Whilst this change was taking place in the character of the buildings generally, the plan underwent modification to a very slight extent; for it is generally found that an intruding style of architecture, in order to obtain a footing in the new ground, has to respect the habits, and to interfere as little as possible with the comforts of the people, so far at least as they are associated with the ideas of *Home*. We

[1] (*a*) From a chimney-piece in Canonbury Tower, Islington, date *circa* 1600. (*b*) Queen Eleanor, from Waltham Cross.

see this at the present day. The Indian house must be Indian in arrangement, although built in the Gothic style, and Swiss châlets in England must have English plans. So the innovators left the plan very much as they found it; and although, as might have been expected, here and there a tendency to uniformity was manifested, still, no very radical alterations were effected which would have made an English house fit for none but Italians to live in. Not even the most slavish adherent of the new school would, for his own comfort's sake, have dared to interfere much with it, and so, left to work itself out during three or four centuries, we have types of plans suited, for the most part, to every grade of society, and all essentially English in character.[1]

And this brings us back to the starting-point, which was,

[1] Mr. E. M. Barry says ("Lectures on Architecture"):—"In England the aspect of the house was outwards, and the windows were so placed as to command views of the country around. This is the case at Longleat, and we should expect it to be so in a great English country mansion; for, although a foreign designer would necessarily be allowed considerable latitude in architectural design, we may be sure that the owner, who would have to live in the house when built, would insist upon a voice as to its general arrangement and aspect" (p. 317). And again, "We find in the Transitional architecture of the Elizabethan and Jacobean structures a very battle-ground of opposing principles. It would not have been English if it had received new ideas and parted with old customs without a struggle. Our fathers, like ourselves, liked to be masters in their own house, and thus we find old ways and habits asserting themselves in the arrangement of their architecture, even when foreign fashions were half-welcomed" (p. 331).

Mr. G. E. Street says:—"In examining the features of any national school of architecture, it is worthy of notice how distinctly some of its peculiarities and prejudices are marked from the very first, even in the ground-plans of the buildings it produced." Again:—"Then the ground-plans of Italian Gothic buildings were simply a natural development from those of earlier date." And again:—"The traces of Classic influence on the plan are, indeed, so many and so clear, that it is hardly speaking too strongly to say that Gothic planning was never developed by Italian architects, so shackled were they by the ever-present influence of buildings in another style."

J. Akerman, Photo lith London.

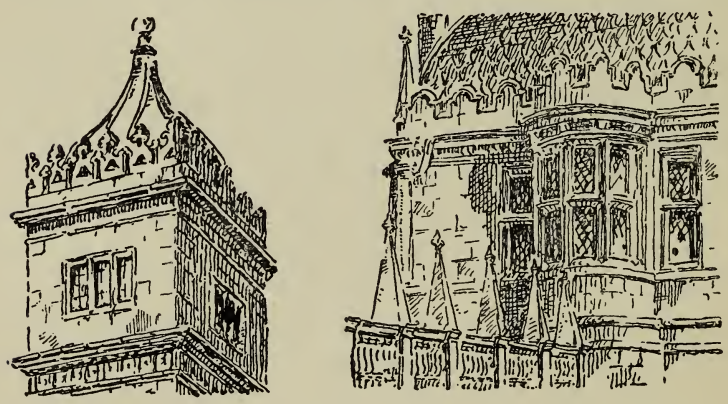
THE GATE-HOUSE, STOKESAY CASTLE, SALOP.

that the plan of to-day is undoubtedly in unbroken descent from that of Tudor times.

Perhaps it will be desirable here to survey briefly the condition of domestic architecture from about the middle of the fifteenth century to the middle of the sixteenth, so far as it bears upon the subject. Previous to the former date, domestic architecture could scarcely be said to have existed, but when the mind of the nation was turned from regarding war as the primary end and aim of human existence, the fortress was no longer considered a desirable abode, which led to certain modifications of plan to adapt it to the growing peaceful tendencies of the times. There was no longer the necessity for guarding against military attacks; perhaps marauding expeditions, which were of a much less formidable character, were all that would render any precautions necessary, till finally no more defensive measures were adopted than are usual to-day, and domestic architecture was started on its course.

The type, though growing from the castellated structure, was not determined by that alone; the monastery furnished many ideas which helped to bring about the development with which we are familiar. The growth was gradual. The old ideas lingered on for some years, clinging especially to the gate-house (see Plate V., the gate-house at Stokesay Castle, Salop), which for some time longer was erected with a view to repelling the attacks of marauders, but in the reign of Henry VIII. the old ideas succumbed to the spirit of the times, and nothing was left of the fortress but some of the architectural features, which, in a modified form, gave the distinctive character to the architecture of the Tudor period. The quadrangular plan, the lofty gate-house, the turrets, embattled parapets, protected windows, etc., were retained, but invested with a peaceful purpose and appearance. The quadrangle, even

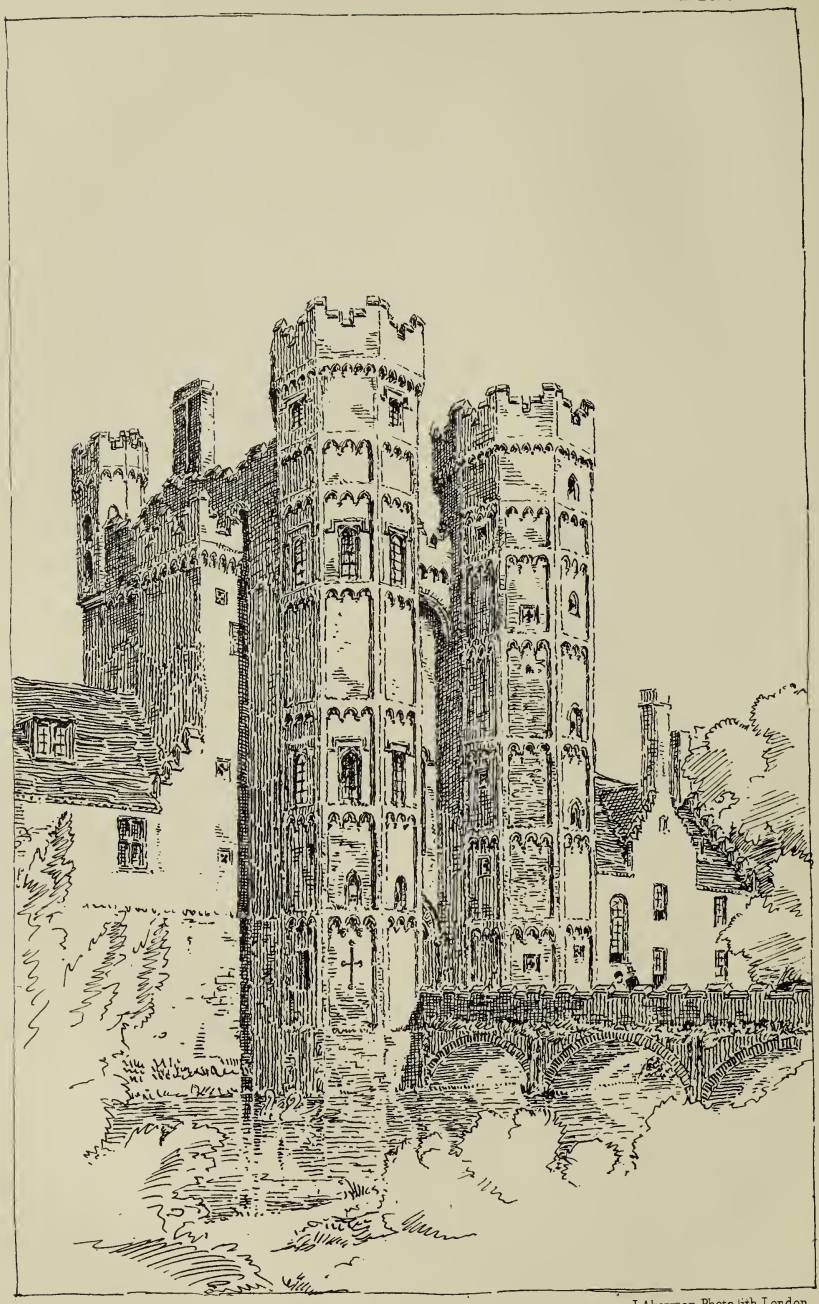
when complete, was vulnerable at many points, but it was not infrequently incomplete, having a separate gate-house with inclosing walls only to complete the form ; indeed, so frequently was this latter arrangement adopted, that it, and modifications of it, became characteristic of the style. The gate-house meant nothing but a stately entrance to the quadrangle, the turrets were in no way defensive, and when too small for staircases or windows, gard-robes, etc., were built solid. They were capped with crocketted ogee cupolas in stone or lead, surmounted by finials or vanes,



b FIG. 11. *a*

painted and gilded, and battlements were made to assume a great variety of fanciful forms, evidently for the sake of the broken sky-line (see fig. 11).[1] A moat, when found in connection with these houses, generally argues the previous existence of a castellated building, the old drawbridge having been replaced by a stone or brick arched structure. Although stone continued to be used, brick came more generally into favour for facings, and, in some cases, even for dressings ;

[1] (*a*) From Montacute House, Somersetshire, date 1580 ; (*b*) From Charlton House, Wilts, date 1615. Richardson's "Old English Mansions."



J. Akerman, Photo-lith London

THE GATE-HOUSE, OXBOROUGH HALL, NORFOLK.

no stone being used, the various forms being moulded into shape as required. Later on these moulded details were ornamented, and it would not perhaps be considered a misnomer to speak of this work as "terra-cotta."[1]

It is curious that this terra-cotta was not longer lived; but for some reason its use died out with the Gothic Renaissance, and from this it would appear that this material was destined to play an important part had the development continued on Gothic lines; but, whatever the reason, the fact remains that the Italian Renaissance found no use for it, and consequently it was discarded.

Brick, when used for facings, was relieved by irregular lattice patterns, formed of headers of darker colour (slate colour), sometimes semi-glazed, and generally stone dressings were used with it, and brick-cutting and rubbing were much in vogue. It would not be difficult to ascertain to what extent the style of the Transition owed many of its features to the adoption of brick. In some cases, as at Oxborough Hall, Norfolk (see Plate VI., the gate-house, date 1483),[2] it appears greatly to have determined the design. Diapering was, of course, a distinctive treatment of the material, and cast ornament equally so.

The crowning glory of this period—the ornamental brick chimney-stacks—left nothing to be desired in this direction. These would at once appear to lend themselves more readily than any other feature to this decorative treatment, which, however, soon spread and embraced others, but never had a chance of complete fulfilment, as before this surface decoration could be carried far the Italian Renaissance arrested its further development; it had, however, persistently fastened itself on the chimneys, and so distinctive did these features become, that to the lay mind of

[1] See Plate VI.

[2] Cotman's "Specimens of Architectural Remains."

our day, they differentiate the style ; but when the Italian influence became paramount we find a plainer shaft adopted, frequently a classic column being made to do duty, the only adaptation requisite being the boring of a hole through it. It was in the Eastern counties that brick was more frequently used, consequent upon the scarcity of stone.[1] Terra-cotta was used for dressings, door and traceried window heads, strings, etc., and as the foreign influence tightened its hold, plaques, medallions, etc., came into vogue (see fig. 4, p. 18).

As has been already stated, the plan remained practically unaltered, the hall being the largest and most important part of the house. At the commencement of the period the various "houses" comprising the quadrangle were entered by separate doors therefrom ; the windows and doors retained their Gothic forms ;[2] the elevations varied

[1] As noted by Leland, the materials of a house seemed to indicate its importance. Brick in Henry VII.'s time was a new and costly material, used only in great houses where stone was not available. The great majority of manor-houses were built of timber down to Elizabeth's time. William Harrison wrote (Hollingshed "Chronicles") :— "The ancient manours and houses of our gentlemen are yet and for the most part of strong timber, in framing whereof our carpenters have been and are worthilie preferred before those of like science among all other nations." Parker states that the first Flemish bricks were used in England at Little Wenham Hall in the reign of Henry III., before which time Roman bricks were used. Flemish bond was introduced in 1572 at Eastbury Manor ; the bricks vary in size, being 7 inches and 10 inches long, and 4½ inches and 5 inches wide, and 2¼ inches and 2½ inches thick.

[2] It would be interesting to know to what extent glass influenced the sizes of the windows openings. Up to about the middle of the sixteenth century, owing to the fact that glazing was too expensive to be a fixture, it was customary to insert it in wood frames, which were temporarily secured to the stonework of the windows, so that they could be taken out and conveyed as movables, for filling other windows. In all probability it would be found that generally the following suggestion would be borne out, viz., that when this interchange was likely to occur, there would be a tendency to make the sizes and shapes of the openings

in height; the roofs high-pitched, and tiled or slated in stones graduated in size from the eaves upwards; the gables often crow-stepped, a treatment that grew quite naturally out of the embattled parapet; ornamental pinnacles were used, very similar in treatment to the shafts of the chimneys; the rooms were more lofty than before; vaulting became comparatively rare, and, in consequence, the buttress to a very great extent abandoned; similar methods of ornamentation were used as obtained in the Gothic, but as time went on the influence of the Renaissance was more and more felt, for a strong German element had been introduced into the country soon after the Italian began to exercise its power. This was Italian work after passing through the alembic of the German mind, and consequently was more Gothic in feeling than the variety imported direct from Italy, or than that coming to us by way of France. The competition between these foreign styles continued until the Gothic element became subservient. Had it not been for the battle of these styles, or their co-existence, the ultimate architecture of this transition would probably have gone on other lines, and although the end—the extinction of the national style—would have been the same in either case, this transitional architecture might have passed, in the

uniform so that the frames would fit, but after this period, when glass became cheaper, there would be less reason for this uniformity, and the size would then be determined independently of any such consideration. Of course, on the ascendancy of the Italian style, the rules of the art would make the sizes again regular, and be partly responsible for the regularity in the sizes of the compartments at Sutton Place, and in all the buildings with distinct Italian proclivities erected during the reign of Elizabeth. It is but fair to remark that at Sutton Place the great uniformity may, to a certain extent, be due to the use of terra-cotta heads to the windows, although there are not wanting proofs of its being adopted for its own sake, or that at least the necessity forced on the builder by the use of terra-cotta did not much disturb his peace of mind.

process of transformation, from the first crude efforts through unknown and, to us, perhaps, inconceivable developments before entirely supplanting the indigenous style; but the introduction of the German element prevented this, and the succeeding phases of the architecture of the transition grew out of the amalgamation; one building exhibiting more of the Italian, and another more of the German influence; and the integrity of both, or we may still say of the three styles, being lost towards the close of the sixteenth century, the bastard style known as "Elizabethan," more correctly "Jacobean," had its birth (see Plate VII., part of Holland House, Kensington, date 1607, a full-blown example of the style).[1]

Some few examples selected from buildings erected during this period will be useful, as showing the distinctive features of the style, and the gradual development of the foreign influence. The list is by no means exhaustive, but it is sufficient for the purpose, and with the appended descriptive remarks, will serve as illustrations to the foregoing.

Hever Castle (1460) and the earlier parts of Haddon Hall show the arrangements of an English house of the class under consideration, immediately anterior to the introduction of the Gothic Renaissance.

Tattershall Castle, Lincolnshire (1433-1455), although not belonging to this class, is selected as being one of the latest of the castellated structures, and of good design. It is executed in brickwork, and affords an instance of the vitality of the style in the design of the windows and the two fireplaces; of the former, of which there are about sixty, by far the larger number are single lights; but of traceried windows there are fifteen different designs, which could hardly have been expected from a style "advancing rapidly to its fall."

[1] Nash's "Mansions of England in Olden Times."

J. Akerman, Photo-lith London

HOLLAND HOUSE, KENSINGTON.

About the same date is Rye House, Hertfordshire. This building is referred to as it presents us with a type of elevation not common till the reign of Henry VIII. It is built of brick with terra-cotta dressings, but with stone jambs to the doorway. The detail is Perpendicular. There is a diaper in brickwork very unusually regular for so early an example.

Oxborough Hall, commenced 1483, is not entirely domestic; it is quadrangular in plan and unsymmetrical, built of brick, not diapered; it possesses some brick vaulting. There is a tendency to uniformity of features shown in the introduction of two bay windows in the hall instead of one. The building is surrounded by a moat, and there are proper loopholes of the usual form in the gate-house.

East Barsham, Norfolk, commenced before 1509 and finished some time in the reign of Henry VIII. (probably the gate-house only was built in this reign), is quadrangular in plan (without a moat), and the gate-house is slightly defensive. It is built of brick, diapering sparingly used; some of the window dressings are of brick, and it possesses some brick vaulting. Generally the dressings, etc., are of terra-cotta; the ornament is highly heraldic; the style is Perpendicular. It has battlements and angle turrets; stone is used for the dressings of the gateway; the chimneys are ornamental, and these, in common with the pinnacles, which are similarly treated, have a stunted appearance suggesting the Elizabethan chimney-shaft in process of development. The windows have plain four-centre arched compartments, but some are square-headed; drip mouldings are used; the ground-storey portions of the turrets have terra-cotta quoins, and on the next storey they are entirely of terra-cotta, while the upper portions are of brick. The roofs are tiled. There is no admixture of Italian detail.

Hampton Court, commenced 1515, was virtually finished in 1520. The hall, which was built by Henry VIII., dates from 1530. In many respects this building is unique. It is quadrangular in plan; built of brick with stone dressings; the wall faces are diapered very irregularly; the parapets are embattled, and generally formed only by a stone string over the upper windows; the battlements are irregular in size and spacing, sometimes the coping, which is stone, is continued round the embrasures, sometimes stopping square on the top; there are no stone quoins; the chimneys are ornamental. The brickwork was artificially coloured. The dressings to windows and doorways, the copings, strings, pinnacles, and some cupolas, plinth moulding, falls of buttresses, etc., are of stone; the carving is heraldic; stone vaulting Perpendicular in style; terra-cotta Cinque-cento medallions; doorways and gateway are Perpendicular in style, but the ornament in the spandrels is Cinque-cento; the woodwork of doors, etc., is Perpendicular, with plain exposed hinges.[1] The windows vary greatly in the number of compartments, in their widths and heights, and also in their levels; there is no restraint in placing them where they are wanted; each compartment has a four-centre arched head, and the compartments are ranged or superimposed as required, utterly regardless of regularity. The bay and flat windows of the hall follow the old arrangement; all the windows have stout stanchions and stay-bars; the bays have Perpendicular panelled parapets, lower than the main parapet; the loopholes are windows. Octagonal turrets are freely used with stone ogee cupolas, or of lead, crocketted, the crockets gilded; finials or vanes and groups of metal bannerets, held by heraldic beasts, gave the finishing touches to these picturesque features.

[1] Mr. Starkie Gardener points out, in his handbook on "Ironwork," that the Renaissance had no use for elaborate hinges.

Some of the turrets contain staircases. There are very few buttresses, and these finish with long slender pinnacles; these pinnacles occur at intervals throughout, rising from the parapet strings, obviously for the purpose of dividing the length and breaking the sky-line; they also occur in the centres of gables. The gables of the hall have grotesques on the copings as crockets; there is generally a stone string at each floor level. The elevations differ in height; the main roofs are mostly covered with lead and of a very low pitch, those of the inferior portion of the palace are steeper and tiled. There is a moat at the entrance gateway. The principal rooms, including the hall, are on the first floor, the ground floor being occupied by offices, etc., and forming a kind of podium. The gate-houses are lofty, being, in fact, towers; the glazing is plain quarry, sometimes with shields of arms, etc. Although the building is really plain, the general effect is rich, assisted to a great extent by the broken sky-line. The hall, which is arranged on the old type, has an open Perpendicular roof, with Cinque-cento pendants; the fireplaces are Perpendicular; the ceilings are in enriched plaster-work, some of the Elizabethan type, and one of very rich Cinque-cento work (which might be leather), with wood ribs and lead bosses at the intersections; there are plaster friezes in Cinque-cento work, with painted subjects below, and a dado formed of rich hangings.[1] Some of the walls are covered with tapestry and some are wainscoted. Foreign influence is apparent in the symmetrical disposition of the entrances to quadrangles; in the use of terra-cotta medallions; the cresting over the gateway between the base court and the inner court; the Cinque-cento ornament in the spandrels of doorways; the

[1] The linen panels, so characteristic of this period, were evidently suggested by the dadoes.

pendants of the hall roof, and the plaster-work of ceilings, etc.

Layer Marney Towers, Essex, built in 1520, is quadrangular in plan, built of brick and terra-cotta ; diapering is used with more regularity than at Hampton Court, but still with a certain amount of freedom ; some of the windows are of moulded brick ; the dressings are of terra-cotta ; there are large windows with mullions and transoms, each compartment with a Cinque-cento traceried head, and Cinque-cento ornament in the mouldings ; wide Perpendicular strings with enriched Italian mouldings ; the parapets have cusped arches with similar mouldings and Cinque-cento cresting over ; gateways, doors, and windows are Perpendicular with hood mouldings ; crow-stepped and plain gables. The gate-house is very lofty and formal in design, and the windows in it are arranged with studied regularity. The staircases are internal, *i.e.*, not in turrets.[1] The roofs were high-pitched and tiled ; a flat lead roof over the tower ; chimneys approaching the Elizabethan type.

Italian influence is shown in the design of the gate-house, cresting to parapets, window heads, chimneys, mouldings, and the use of terra-cotta.

Compton Wynyate, Warwickshire, was erected before 1529, probably in the reign of Henry VII. It is built of brick, with stone dressings, and some irregular diapering ; it has embattled parapets ; chimneys developing into Elizabethan ; the gables are half timbered, with plaster filling. The hall is as usual, but the impending change is shown by the two storeys of flat windows, the bay being of

[1] Eastbury House contains, perhaps, the latest turret stairs, the Italian model being subsequently adopted. Two very early specimens of newel staircases occur, one at West Deane Rectory, Sussex, and the other at Wenham Hall, Suffolk, both dating from the thirteenth century.

the same height but of one storey (see further development of this feature at Sutton Place).

Sutton Place, near Guildford, Surrey, commenced 1523-1525, is quadrangular in plan, and purely domestic in character, built of brick, irregularly diapered, with terra-cotta dressings and ornament; the doorways are perpendicular, with an enriched Cinque-cento panel treatment over, with amorini and arabesque borders surmounted by a drip moulding. The entrance to the house was opposite to the gateway, leading to the quadrangle and central therewith. There are bay windows in the quadrangle symmetrically disposed, with lozenge-shaped panels at first floor level, and having parapets with similar panels in continuation of the main parapets, which are varied, one portion having lozenge panels as to bay windows, whilst another has a quatrefoil enrichment; these quatrefoils are formed of window heads; some portions are quite plain, and some have a large cross, probably not a part of the original design; the grounds of the quatrefoils are plastered; the roofs are tiled in stripes, the gables crow-stepped.[1] The windows are flat-headed, with cusped arches over the compartments, and with Cinque-cento ornament in the mouldings. The building has terra-cotta quoins and turrets, with bulbous cupolas, all in terra-cotta. There is a well-moulded plinth. The chimney stacks are rather plain, none occurring in the quadrangle; apparently they were kept

[1] The writer of the account of the twenty-fourth excursion of the Architectural Association in "The Builder" (August 19th, 1893) suggests that the crow-stepped gable is the logical treatment of brick when stone tradition is absent; but in the same issue of "The Builder" is an illustration of "University Hall Extension, Edinburgh," which is designed in the "old Scotch domestic style"—a stone architecture, and of which crow-stepped gables are peculiarly characteristic. The writer, in commenting upon the building, says that "the first view rather suggests Flemish influence," and there is little doubt that his latter suggestion is the correct one.

out so as not to interfere with the uniformity of the elevations. The ornamentation is free from everything of a military character, save only the shields of arms which are freely used in the glazing. The hall is as usual, except that it affords an instance of growing importance attached to uniformity; the position of the principal entrance was placed not at one end of the hall, which is the most convenient position for it, but towards the centre in order that it might be central with the quadrangle. The ceiling of the hall is flat. The quadrangle is very ornate, but the outer elevations are plainer and are unsymmetrical.

The foreign influence is shown by the importance attached to uniformity of parts, even when convenience had to be sacrificed to obtain it; in the opposite and central arrangements of the entrances; and in the uniformity of opposite elevations in the quadrangle. The disposition of the hall windows shows it very clearly, where, in order to secure the unbroken lines of windows round the quadrangle, they were all, including the bay, divided into two storeys instead of running up through the first floor level, as had been formerly the custom (see hall of Compton Wynyate). It is also apparent in the style of the terra-cotta ornament, but in no case, in spite of the Italian influence, are any Italian structural features introduced.

The Parsonage House, Great Snoreing, Norfolk, built in the reign of Henry VIII., is of brick, with terra-cotta dressings and ornament. The Italian influence is strong in the forms of the upper frieze and balusters.

A few other examples are here mentioned, to which reference could be made, all more or less designed on the same lines.

Falkbourne Hall, Essex, 1440.

Nether Hall, Essex, temp. Henry VII.

Gifford's Hall, Suffolk, temp. Henry VIII.

St. Douat's Castle, Glamorganshire, where there are terra-cotta plaques similar to those used at Hampton Court.

Cowdray House, Sussex, built before 1542.

Brimpton, or Brympton, at Evercey.

Bingham Melcome, temp. Queen Mary, which shows a great advance in the style.

At the end of the sixteenth century a clearly marked change is apparent. The Gothic Renaissance became extinct, and the immediate future of architecture was divided between the Italian and its former rival; but the

FIG. 12.

purer Italian of Elizabeth's reign was losing ground, and by far the larger number of houses of this date exhibit the influence of German inspiration.

Wollaton House, Notts (1580-1588), is an example of the former, and Bramshill House, Hants (1603), affords an illustration of the latter (see Plate III., p. 15, *ante*).

It is not to be supposed that at the beginning of the Gothic Renaissance the indigenous architecture became extinct; many Gothic houses were erected, but smaller, and built by and for a class which was more tenacious of old ways and customs, less educated, not so opulent,

and who were content to go on in the old groove. This class of house has not been taken into consideration here, but it continued the style, *i.e.*, so much of it as such buildings would possess, down to a late date (see fig. 12, part of an old farm-house at Duston, Northamptonshire, date 1611),[1] and it was long before such houses were affected by foreign feeling, in the shape of a Jacobean doorway or some one of the other Jacobean features which stamp them with the mark of the seventeenth century (see fig. 6, p. 22). But we owe to these less ambitious builders a debt of gratitude in that they preserved to us for a longer time the unadulterated style of our forefathers.

[1] "The Building News," April 3rd, 1885.

THREE PERIODS OF ENGLISH ARCHITECTURE.

SECOND PERIOD—ASLEEP.

"How shall I build this thing? should be the constant question of the architect while composing, instead of, what form shall I give to it? If the former question is responded to in our composition; if this question is intelligently answered at every step of progress, forms will grow out of it; but if we design monuments in response to the latter question, the monument is never contemplated seriously, scientifically, or artistically as a whole, but as an aggregation of disjointed parts; hence the other question:—How can I join this and that together with architectural propriety? is the question which most frequently occurs in modern architectural composition. The moment the architect finds it necessary to ask or answer this fatal question he may be sure that he is pursuing the wrong course. He has started his work with completed forms, and is not developing them."—LEOPOLD EIDLITZ, *The Nature and Functions of Art, etc.*, p. 481.

ASLEEP.

WHILST there is no difficulty in assigning a date at which, generally speaking, the architecture of the mediæval period in this country gave place to that of other times, and of another clime, and seeing that we have yet to confront the architecture of the future, there is somewhat of a difficulty in assigning a limit to this intermediate period; if the architecture of the future is awaiting an upheaval such as occurred in the sixteenth century to usher it in, then are we still in the intermediate period, but if the times warrant the thought that drastic measures are not now so often the accompaniments of such changes as formerly, then, judging by the vigour of much contemporary work and various other signs, the severance may have already commenced, and cutting ourselves adrift from the various phases of the architecture of the last two and a half centuries, we have already commenced to set our house in order, preparatory to the advent of the architecture of the future. If this should be the case, then the Gothic revivalists have been the pioneers of the movement, and instead of, as they supposed, reviving mediæval architecture for modern use, they were unconsciously initiating a forward movement, the full power of which has not yet manifested itself to us.

If this is so, then the third period may be said to have commenced with the Gothic revival; but the heading of

this chapter is elastic enough to suit those who take a different view. To the *pessimist* the advent of the third period has certainly not yet arrived, but to those who hold the above view it has been with us for at least half a century.

Mr. T. G. Jackson remarks:[1]

"Modern architecture is, and must for the present continue to be, an anachronism, an affectation, a sham. There is no reason to doubt that it has promise of life within it, and has already begun to take root; but there can be no doubt whatever that at present its life, such as it is, is chiefly drawn from the parent stock, and that it has very little independent spontaneous vitality of its own, and, moreover, that it will not bear forcing, but must be allowed to grow at its own natural pace."

So long ago as 1860 the author published a brochure, entitled "Victorian Architecture," in which he endeavoured to give form to the idea, even at that time very generally received, viz., that if architecture is to have any meaning at all, a "new style," as it was then called, was necessary. The prevalence of this notion sufficiently proves its reasonableness. All who think on the subject feel intuitively that this confusion of styles, in the presence of which we find ourselves, can only be provisional; that we are drifting on to something better, something which must be evolved from the chaos, and which will prove to be the style for which we are looking and hoping. In every architectural work published within the last few years, which touches at all on this subject, the same unrest is noticeable. In the meantime we must be prepared to adopt new methods of construction, and accustoming ourselves to novel forms and proportions, arising out of the use of materials unknown to our forefathers, force ourselves to break with prejudice and take common sense and reason as our guide.

[1] "Modern Gothic Architecture," chap. vi., p. 182.

A few extracts from this brochure show that the same dissatisfaction with things as they are, and the same longings for what might be, are, in some form or other, always with us.

"We will endeavour, in the first place, to define what constitutes nationality in architecture. An architecture to be national must be strictly the outgrowth of the wants and feelings of the age and country; a *living* art, which will bring out and improve the mind of those engaged therein without enslaving it; an architecture which, while it may seem to run counter to time-honoured usage, is yet found, on strict investigation, to observe higher rules than it transgresses; and which, while it realizes the ideal of our own time, can idealize the real under every change of circumstance.

"The works of past ages, whether Egyptian, Greek, Roman, Italian, or Gothic, must and ever will claim the admiration and respect of every thoughtful mind, in so far as they express their nationality; but a reproduction of any of these in this age (advanced as it certainly is in civilization and scientific knowledge) must fall far short of the like result. The adoption of this or that particular period of art, however good and genuine in itself, will not suffice; no remodelling or adapting will do, but a total reproduction, arising out of and growing up with the advancement of the age; an *indigenous* style of our own, embodying the *spirit* of the good of every age, and springing out of ourselves, 'rather part of us than ours,' an honest, independent, simple expression of the true God-fearing English character.

"All this is evidenced by the fact that every new production of the present day in architecture betrays, in a greater or less degree, a dissatisfaction with our present acquirements, and an anxious yearning after something more expressive and original. Not but, it must be confessed, that much that is good and praiseworthy has been grafted into our art, but the want of moral courage to shake off precedent has rendered these efforts merely puerile; the result being that many of the achievements of the present day are nothing more than substantial *skeletons* (if so much) dressed up and disfigured by flimsy shams, having *neither flesh nor sinews, much less life*, and not worthy to be classed among the productions of true art. Mere elaboration and costliness, however tastefully

displayed, will not produce genuine art; even a less ostentatious result, truthfully obtained, is far preferable to the most attractive and elaborate falsity. In fact, all art, to be good and lasting, must be truthful.

"The architecture of all past ages must be thoughtfully studied, in connection with the historical characteristics of the periods, to educate the mind and gain the *spirit and principles of application*, but not for mere *unfeeling stereotyped copying*. . . .

"This is an age of new creations; steam-power and electric communication, neither the offshoot of any former period, but entirely new revolutionizing influences. So must it be in architecture, if it is to express these changes. We must no longer grope about amongst the mazes of former ages, but must ascend to clear first principles, and with strong faith chisel out for ourselves new expressions, being content with simple, and, it may be, rude achievements at the outset; not attempting to soar beyond our powers, at the risk of losing ourselves in the mists and clouds of extravagant conceits, but bearing always in mind that humility and simplicity are the *only* robes of true greatness in all things, secular and divine. The first expressions of art in all ages, as in language, have been contracted and unsatisfactory; but with truth as the foundation, and consistency as the guide, the ultimate result cannot be far from that desired."

It is interesting to find that in the literature of the Royal Institute of British Architects so much reference has of late been made to this subject, for opinions from such a source, carrying with them a certain weight of authority, represent collectively more than mere individual views; and, with such a consensus of opinion in one direction, it is a matter for wonder that this question has not before now been brought within touch of actual solution.

In giving the following extracts from papers read, and discussions thereon, and comments and references to other authors, etc., the author desires to direct attention to the feeling, so generally expressed, that a new departure is desirable, and subordinate to this the three propositions, viz.,

1st, that it must be founded on the last phase of Gothic;[1] 2nd, that external polychromy will be one of its chief characteristics; and, 3rd, that it is by the use of essentially modern materials that the path will be opened for it.

Mr. Tarver, in a paper read at the Royal Institute of British Architects, December 17th, 1883, admitted that Gothic, at the beginning of the sixteenth century, was capable of improvement, at all events in its details. "Whence," he asks, "was the improvement to come?" and he went on to say that in the first thirty years of the century it *had* come, and that it was due to foreign talent. "The attempt to inoculate the national style with Roman lymph," which at the commencement Mr. Tarver speaks of as "commanding respect," might have ended, had it been persevered in, "in exciting our admiration."

Professor Kerr says (May 9th, 1884):

"At the moment when Barry, in his club-houses, offered us a new version of Wren's Classic, we threw it over and reverted to Gothic; and at the moment when Street, in his Law Courts, has brought Pugin's Gothic to supremacy, we now cast that aside, and return to Classic. Such is the play of action and reaction: art is a long story, but its chapters are short."

But surely not so short. There must be a reason for this, and may it not be found in the fact of two styles running concurrently? May not this be responsible for the medley, and will not this 'play of action and reaction' continue so long as we indulge in two styles? Unity of thought and action has been more than once secured in our history by the amalgamation of opposing interests."

[1] Mr. Burges says:—"Unfortunately Mr. Pugin took the style of mediæval art which was prevalent in his day, and consequently his fabrics, although excellent in themselves, do not go too well with our modern development of the same art, which has taken its inspiration from earlier and purer models than he did."—*Art Applied to Industry*, "The Weaver's Art," p. 90.

The "Orders" would have to go. There could be no place for an untruthful decoration such as they afford in any acceptable combination of the rival styles. The absence of most of the familiar features of Renaissance architecture by name, in the extract given on the opposite page from Mr. Emerson's paper, is not the result of chance. The following quotation from Schuyler's "American Architecture" gives a sufficient reason for abolishing them:

"It is, I believe, historically true in the history of the world, with one conspicuous exception, that down to the Italian Renaissance, some four centuries ago, the architect was himself a builder. The exception is the classical period in Rome. The Grecian builders, as all of you know, had taken the simplest possible construction, that of the post and lintel, two uprights carrying a cross-beam, and they had developed that into a refined and beautiful thing. The Romans admired that, and they wished to reproduce it in their own buildings, but the construction of their own buildings was an arched construction, it was a wall pierced with arches. They did not develop that construction into what it might have been. They simply pierced their wall with arches and overlaid it with an envelope of the artistic expression of another construction, which they coarsened in the process. According to some accounts, they hired Greek decorators to overlay it with this architecture which had nothing to do with it, and there was the first illustration in all history of this difference between the art of architecture and the art of building. In every other country in the world the architect had been the builder. I think that is true down to the Italian Renaissance; and then building was really a lost art. There hadn't been anything really built in the fifteenth century, and they began to employ general artists, painters, sculptors, and goldsmiths, to design their buildings, and these men had no models before them except this Grecian-Roman architecture of which I speak. These men reproduced that in their designs, and left the builder to construct it the best way he could, and that, I am told, is a process which sometimes prevails in the present time. But before that everything had been a simple development of the construction and the material of the building, and since that men have thought they perceived that

architecture was one thing and building was another, and they have gone on to design buildings without any sort of reference to the materials of which they were composed, or the manner in which they were put together.[1] That is the origin of the exclusively modern practice of working in architectural styles, as it is called. Why, before the fifteenth century, I don't suppose any man who began to build a building ever thought in what style he should compose it any more than I thought before I got up here in what language I should address you; he simply built in the language to which he was accustomed and which he knew."[2]

Mr. Emerson (May 19th, 1884) asked:

"Might it not be that in such an endeavour to unite Gothic and Classic we might perchance strike the keynote of the architecture of thirty years hence, as hinted by Professor Kerr? Let it be a Renaissance suited in every way to our modern requirements, not the Renaissance of a fifteenth or sixteenth century Italy, but a Renaissance of a blended spirit of Gothic and Classic, exemplified in some such works of an earlier century. . . . A Renaissance whose arms shall be long enough and bold enough to embrace the lintel, the round arch, and the pointed arch, the picturesqueness of the Gothic vault, and the dignified nobility of the Classic and Oriental dome; where the crudities of Gothic art shall be eliminated, and the refinements of Classic art introduced."

This sinking of differences to which Mr. Emerson refers has been foreseen and (by the Gothicist), perhaps, dreaded for years, and no one has dared, even with bated

[1] With reference to the use of the terms "architecture" and "building" it is scarcely necessary to remark that when they are juxtaposed in this way throughout these papers, no such distinction as is here referred to is intended, neither would the use of them expose one to the scathing remarks of Mr. Eidlitz, who, in "The Nature and Functions of Art," etc. (quotations from which will be found herein), rightly insists that the art of architecture *includes* that of building. But such a distinction is necessary as between the *body* and *soul* of architecture. The idea that a "new style" can be invented naturally concentrates attention upon what is understood by the term "architecture," whereas it is to that which is understood by the term "building"—the part which is the vehicle of the architect's ideas—in which the hope of the future lies enshrined.

[2] "American Architecture," M. Schuyler, pp. 3, 4.

breath, to express plainly what was hoped—or feared; but we appeal to the writings of some of the most eminent of our architects for confirmation of what we advance.

Sir G. Gilbert Scott, on "The Architecture of the Future," says:

"It may be asked, what influence do we expect that the present so-called Classic styles will exercise upon the result we are imagining? Is the work of three centuries to be unfelt in the future developments, and its monuments to remain among us in a state of isolation, exercising no influence upon future art? It would, I am convinced, be as unphilosophical to wish, as it would be unreasonable to expect this.

"The actual course of things may probably be something of this kind. The two great schools of architecture (known unreasonably enough by the names of Gothic and Classic) will probably run on for many years collaterally. In each there will be a servile and a developing party, and in each the latter will be ever gaining the ascendancy. As the developing parties in the Classic school progress, they will probably be ever striving to perfect the *arcuated* element in their architecture; they will also see that the perpetuation *ad infinitum* of the details used in ancient Rome is, on the very face of it, absurd, and will substitute ornaments founded upon nature for the worn-out enrichments of their school. This, with the introduction of new materials and inventions, and the constructive colouring which *we* also aim at, will gradually assimilate their developments to our own, till at length (as I fully believe) they will unite in a style infinitely more Gothic than Classic.

"The influence of existing Classicism on our own developments will, I apprehend, be comparatively slight, but still pretty decided. As in Italy the presence of antique remains ever influenced the mediæval styles, so will the presence of the imitations of them influence, though in a vastly less degree, our own works. The Roman remains, however, in Italy were *noble*, and pointed back to a glorious history, and no wonder that their influence was strong. Such can hardly be predicated of our own pseudo-Classic buildings, though doubtless many of them possess great merit. All that is really national or historical in the buildings around us must ever draw us towards the mediæval styles. What, then, will be the effect of our Classic buildings on our new style? I think it will be

little other than to lead us in *town*-buildings to assimilate our leading forms, in a slight degree, to those by which they must for many years be surrounded; and, as a means of doing this, I think they will lead us to study the mediæval works of Italy in conjunction with our own; not to *adopt* Italian Gothic, but simply to learn from it so much as will enable us to soften down the asperity of the contrast between our own Gothic and the mass of modern buildings; and to prevent our introducing positive discords, while we are developing an architecture which we hope will in due time supersede that hard, ungenial style which at present paralyzes every warm and hearty aspiration for noble architecture in the minds of the generality of our population." [1]

Although there is in this quotation what appears to be a plain admission of the author's presentiment, yet, judging by the context, it can hardly be taken to mean quite so much as it appears to.

On this subject Mr. G. E. Street remarks:

"There will, however, be much profit in the careful examination of such works as these in Italy, because their authors stood in the same position as we do now, and conversant, to some extent, with the beauties of the best Gothic architecture of the North and the best Classic examples of Italy, took what they deemed best from each, and endeavoured to unite the perfection of both." [2]

What is this but saying that, in the difficulty in which we find ourselves, the best thing to do is, forgetting all differences in the past, to join hands and work in the future to one common end. It is of course natural that the exponents of both schools should shrink from what they would consider a surrender of all they hold most sacred. The same author writes (page 269):

"And seeing that all the faults of Italian Gothic architects arose from their incomplete devotion to the new art, and their lingering fondness for old Classic forms, we shall be led, probably,

[1] "Secular and Domestic Architecture," chap. xii., pp. 276-278.
[2] "Brick and Marble in the Middle Ages," second edition, p. 363.

to recognize the paramount importance of throwing ourselves heartily and entirely into the study and practice of the one great and national division of our art; and then, not venturing to attempt to design in some base imitation of Classic one day, or in a pretended Gothic the next, as is really too much the custom, we shall make our sense of art so completely a portion of our inmost selves, as never to do anything new in any but our own special style. We shall, in short, recognize as the greatest danger to the progress of real art that eclectic spirit which the Italians never escaped from, and which, in our own day, leads men to design their work in the style which they or their clients fancy for the moment, and not in that which is the truest result of previous experience, and most fitted to the country in which it is to be executed."

Here the cosmopolitan tendency of the former quotation is conspicuous by its absence. One almost detects a feverish anxiety lest any of the leaven of Classicism should be admitted into the pure and unadulterated style of which Mr. Street was so able an exponent. The unequivocal caution against practising, as circumstances require, in both styles many will cordially endorse.

It is beyond doubt that the beauties which are most characteristic of Italian Gothic are, to a great extent, due to the reluctance to break with the old traditional architecture. Is it not due to adherence to the ancient type of ecclesiastical plan, all through the mediæval period in Italy, that we get the broad plain masses so necessary for the display of those glorious schemes of colour for which the Italian churches stand unrivalled? Would such successful and magnificent results have been possible under any other conditions? and yet Mr. G. E. Street speaks of this characteristic as a fault happily rectified by the painter! He says:

"The same absence of sub-division is seen in the elevation of each bay in an Italian church, where, in place of the triple division in height of our great northern churches, with their well-accen-

tuated proportions and beautiful variety of detail, we have a singularly meagre design perpetually repeated, and consisting generally of simple broad arches, with a small circular clerestory window above them, and no other kind of decoration *save where the painter has come with his ever ready art to the rescue of the apparently incompetent architect.*" (The italics are the author's.)

By way of comparison another quotation is given from the same author, where, in speaking of marble incrustation, he says:

"The men who did this work were perhaps more of sculptors than of architects; and certainly it must be confessed that never, in buildings in which the construction is mainly thought of, is there, so far as I know, so much elaborate thought and skill exhibited in the decorative part of the work, as in buildings such as these."

It may be urged that two such apparently antagonistic styles could not be successfully amalgamated, but the existence of Italian Gothic is a sufficient answer. It proves it to be possible, and that without sacrificing beauty of form or colour. If this be so preposterous a thing as we may be told it is, how is it that it seldom fails to captivate and charm the travelled architect, who returns to his native country enthusiastic over the ravishing beauties of this Italian work?

Mr. T. G. Jackson says:

"If we turn to Renaissance art in particular, as we may fairly do, for next to Gothic it has the best claim to be regarded as a native, or at all events naturalized style, we may safely say that there is nothing in the best ornamental work of that style that unfits it for application to Gothic work. In the painting and sculpture of the early Renaissance, which, especially in Italy, attained to almost unrivalled excellence, we see nothing but Gothic art further advanced towards perfection, differing from the earlier work only in superiority of execution and nearer approach to nature: while the architecture of the Elizabethan houses of England, by Thorpe and others, of the great chateaux of Touraine,

and of the palaces of the Lombardi at Venice, is thoroughly Gothic in treatment and sentiment whatever it may have gathered to itself of Classic details. It is, in fact, a style of Gothic architecture, in spite of the fact that it makes use of many forms of Classic origin."[1]

Again, Mr. Jackson says:

"And consequently, since it is not in its forms but in its principles of design that the essence of a style consists, Renaissance architecture which used Classic forms on Gothic principles cannot fairly be regarded otherwise than as a style of Gothic architecture."

We find this process at work much earlier in the history of architecture; as Mr. Schuyler in his "Studies of American Architecture" very aptly puts it:

"But for these comparatively trivial incidents of his work, Mr. Post's free Renaissance would have to be classified as Gothic, if it were really necessary to classify it at all, except as good architecture. Mr. Post, in fact, has done on his own account what the Romanesque builders did. They, too, were doing 'free Classic.' They began with classical Roman architecture, and, steadily leaving out what they did not want, they arrived at Westminster and Amiens and Cologne."[2]

In a paper read before the Royal Institute of British Architects, March 15th, 1886, Mr. J. B. Gass remarked:

"New combinations are introduced, dictated by and growing out of the necessities of the building, without violating the character of the style. The best work is accordingly living and interesting; less the production of a dryasdust archæology, and more in accordance with the true principles of all great architecture."

In the discussion which followed Mr. R. Phené Spiers said:

"I remember I could not help thinking that when Professor Ware went home (to America), he would be, in one sense, a happy man, because he would be able to found a style upon principles,

[1] "Modern Gothic Architecture," chap. iv., pp. 115, 116 and 121.
[2] "American Architecture," M. Schuyler, p. 48.

his pupils would not always be bound by precedent, and he would be able to bring materials into use which we find it difficult to do in England."

Professor Kerr added :

"You must always bear in mind that the Americans are the English of the future . . . that if we look at what they are doing now, *that* is probably what we are about to do in the course of a certain time." [1]

Mr. Waterhouse in his presidential address (November 5th, 1888), referring to the late Mr. H. H. Richardson, the American architect, said :

"He has left behind him a school of young Americans who appear to be following his steps in developing the capabilities of Romanesque art—an art which, we must bear in mind, did not die of inherent weakness, but was extinguished before its time, in the twelfth century, by the difficulties of vaulting oblong spaces, and the consequent introduction of the pointed arch."

It would be interesting could we but know how it was that Mr. Richardson was led to adopt the Romanesque, from which to develop the style with which his name is associated. May it not have been this? Seeking a style which was undeveloped he found the Romanesque, and instead of following in the direction taken by the twelfth century builders, he placed himself in the position of an architect of the twelfth century with a modern practice in America, having an untold wealth of

[1] We hope for the future of our art that the phase of transatlantic art to which the following applies was not in the professor's mind at this time :—"It has, indeed, been said that American humour has never found full expression except in architecture. It has also been said by an honourable friend of mine, himself an architect, that American architecture was the art of covering one thing with another thing to imitate a third thing, which, if genuine, would not be desirable. But I hope you will agree with me that, though the expression is comic, the fact, so far as it is a fact, is serious even to sadness."—Mr. Schuyler, *American Architecture*, p. 1.

material to use of which the builders of that early day knew nothing.

This development of Romanesque in America is a very interesting fact. We have an accomplished American architect deliberately adopting, after—as one might imagine —much hesitation and misgiving, this style as his point of departure for a modern American style. This suggestion has been offered as a plausible reason why Mr. Richardson was induced to make this preference in favour of that style, which would have seemed to be the last to be selected, and the least suited for his purpose.

Mr. Fergusson did not think Romanesque could be revived as a "root" style, but if the mantle of Mr. Richardson has fallen on any disciples, Mr. Fergusson's insight into the future will be proved to be at fault.

Professor Kerr in the "Journal of the Royal Institute of British Architects" (March 28th, 1889), referring to Mr. Richardson, says :

"The massive Norman pleased the primitive American mind; even the mere pointing of the arch that came next in order, so popular with us at that time, seems never to have taken his fancy at all."

Did he not purposely avoid it, knowing so well each consecutive stage along the road he would have to tread (the thirteenth, fourteenth, and fifteenth century Gothic)? His aim was to strike out for himself another road parallel with it, and not as the Gothic revivalists, who were content, after fixing each on his own point of departure, to travel along on the same old road, in many cases taking pains to step in the very footprints of the old builders, so fearful were they of going wrong, by which they meant doing something for which they could produce no precedent.

Sir Matthew Digby Wyatt says :

"It will be observed that in all these Florentine remains, as I

suppose they were at some distance from the great focus of Rome, so their art differed very materially from the regular traditional form in which art was admired by Vitruvius. The Orders are comparatively left in abeyance, and the great cornices are made proportionate, not to the Order at all, but to the ordinary height of the structure. And in the great palaces of Italy you will find almost an original invention, as though the designers had never even thought of the five regular Orders into which Roman architecture is supposed to be divided. But with the publication of the works of Vitruvius a change certainly did take place, and then it was that the Orders began to show themselves in architectural designs." (Institute, June 16th, 1887.)

Mr. A. Graham says :

"Every historic style has started with borrowed or inherited ideas and principles, which have been subsequently modified or developed to meet changing fortunes or climatic conditions." (*Ibid.*, March 8th, 1888.)

Professor Kerr on Mr. Beresford Hope :

"In a word, although myself an adherent of Classic architecture, and, indeed, of all classic art, I cannot help thinking that, if only as a question of racial development, the muscular vigour of Teutonic or Northern art has always been at home in England, while the delicate finesse of the Latin or Southern genius has found itself more or less exotic and at fault."

And in speaking of the failure of any abiding influence for good of either style on the other, he further says :

"The battle of the styles which then raged may be disparaged by feeble folk, who love peace—and profit—at any price ; but in what condition has the cessation of that battle left us now ? The great rival principles for which we contended have, not only one of them, but both, been surrendered." (*Ibid.*, March 22nd, 1888.)

It can only be repeated here that this was brought about by the attempt to naturalize Italian and use it side by side with Gothic.

Mr. T. Millard Reade said :

"It is true that the Gothic revival professed to be founded on certain true principles not to be discovered in other styles, or, at all events, not to the same extent; and to this fact it undoubtedly owed much of its vitality. It was, however, found wanting in pliability, hence the reversion to the much abused Renaissance, and the introduction of the Queen Anne and other styles admitting of free modes of treatment. Had the architects of the revival thrown much of their precedent aside, and handled the problem they had to deal with in the free way common to our grand old mediæval builders, the result might have been different." (Institute, October 24th, 1889.)

Mr. W. H. White, quoting Mr. Fergusson on the "Prospects of Art," says (December 4th, 1890) :

"The first [principal point to be aimed at] is to restore to art its progressive vitality, or, in other words, to give up all imitation of past styles, and to start at once with the determination to surpass all that has hitherto been done—to progress towards a degree of perfection that has not hitherto been reached."

On June 25th, 1891, Mr. F. Grainger remarks :

"Cement is used for architectural features; stucco is used for the facing between the brick quoins, with very good effect sometimes. More than this, stucco forms a field for painting, of which the designers have sometimes availed themselves. . . . Perhaps it is English shamefacedness which makes us shrink from this kind of thing. We lose thereby nevertheless."

Mr. E. M. Barry says on this subject : [1]

"We are often very hard on our immediate predecessors who covered their brickwork with stucco, but we may remember that their buildings, at any rate, admit of being cleaned, so as to afford some cheerfulness to our streets. Architects may perhaps consider whether they have not been too indiscriminate in their denunciations of plaster. For interiors, at any rate, it has many advantages, and is often to be preferred to the rude brickwork, not too good,

[1] "Lectures on Architecture," p. 364.

either in quality or workmanship, which we are asked to accept in exchange. No one would desire to use cement dressings and cornices if he could do better, but for coating plain walls plaster will act as a protecting covering, giving both warmth and dryness. There should be some place in our work for methods of building which possess these advantages, and the question arises when and how plaster may be legitimately used."

All that is contended for is that our architects to-day should do as Professor Kerr (April 23rd, 1891) says the Italians did at the time of the Renaissance; they wanting fresh inspiration, went for it to the works of their forefathers. Nothing could be more rational; but when the same want is expressed in England in modern times and the same method adopted to meet it, Professor Kerr disapproves. In speaking of the Gothic revival he says, "that the dead Mediæval mode should be revived in time as an intellectual or imaginative exercise was a certainty." "The Cinque-cento," he adds, "simply began where the Romans had left off; modern Italy took up the tools exactly as ancient Italy had laid them down, and ignored the intervening proceedings—struck them out of the minutes." And he eulogizes them for it, at least, he says that by this means "modern Europe possesses a style." *A* style! surely this is no gain to modern Europe, which in the meanwhile has lost several styles, which, moreover, had the advantage of being national. Would it be advisable that modern Europe should possess but one dress, one language, and similar customs? What an insipid place to live in modern Europe would be in such circumstances!

M. Viollet-le-Duc remarks:

"With our materials, and the employment in our buildings of metal of large dimensions, we may advance beyond the mediæval builders; but this cannot be effected by ignoring what they did, or by following them step by step, but by starting from the point

which they had reached, and mounting still higher the ladder of progress."[1]

Sir Matthew Digby Wyatt once remarked:

"Artistic forms are the vesture of ideas and the expression of mental conditions; the ideas and mental conditions of our day are widely removed from those of the middle ages; the modern mind cannot, with fitness, put on the garb which was moulded on the mind of a day long gone past. But if we may not fitly adopt those forms, we cannot too reverently note the spirit which presided over their development, for a like spirit brought to bear on another material, and under other conditions, may yet bear new and noble fruit. And the characteristics of that spirit are a masculine independence, a tenacious grasp of central principles, a fearless sincerity in expression, a scorn of shams and trust in truth."

Mr. E. Ingress Bell, February 27th, 1893, observed:

"It is impossible to forecast the direction which the study of terra-cotta, as a medium of architectural expression, will ultimately take. The yielding clay is fortunately open to receive the impress of many minds. It may be that some development of Romanesque —a style which the American architects have found elastic enough to cover many modern requirements—will provide the most suitable basis. Or it may be that a free and picturesque handling of our Early Renaissance, before it quite broke with the Gothic spirit, will supply the desired 'motif.' Or these various treatments may be severally suited to various ends. In any case, the limited size of the blocks procurable seems to point to some style in harmony with our native art, which is essentially an architecture of small elements. . . . . Is it too much to hope for the resuscitation and evolution of our native and indigenous architecture, from the point in its career which gave the first hint of decadence, when the importation of a foreign influence checked, convulsed, and then destroyed it?"

And then Mr. Bell, after referring to the distinctive

[1] "Lectures on Architecture," vol. ii., Lecture XII., p. 75.

treatment of terra-cotta, viz., ornament in relief, instead of being sunk, as in stone ornament, goes on to say:

"Can we take up at its best point, this last distinctive phase of our national architecture; and in a more congenial material restore to it the life and thought which inspired its highest efforts; carrying it forward, as its authors might have done, with the command of our modern aids?

"It is conceivable that, by persevering trial, a form of architecture may be evolved in which, under shelter, protection, and support of the leading forms which should mark the constructive scheme, subordinate and independent spaces, on a grand scale, may be reserved for artistic treatment in relief—spaces which should be to the modeller what the canvas is to the painter. . . . . I do not for a moment suggest that we can hope to arrive at a nobler *form* of architecture than that which our ancestors have bequeathed to us. That is not the question. It is rather this,—have the possibilities of the older art, when confined to the traditional materials, been played out, and does the *new* material placed in our hands afford an opportunity for new and legitimate forms of expression?"

Mr. T. Millard Reade remarked (November 10th, 1892):

"The ideas then in the ascendant were that we should take a certain well-known style as a point of departure, the thirteenth century Gothic, for instance, and develop it with the object of eventually arriving at something new. . . . . Very few get any distance from the point of departure, ... perhaps if more had been known of the laws of evolution . . . . we should have been saved the loss of time in harking back. I knew nothing of the science of evolution then, but common sense urged this view of the logic of Gothicists—'You are choosing a style that had run its natural course to maturity and decadence in the middle of its development. How, then, is it possible to develop the style into a living style without grafting something new upon it?' The answer came, that it was not possible."

The mistake here made is in harking back to *thirteenth* century instead of *fifteenth* century Gothic. Development

had been going on between those dates; why ignore the fact? Evolution cannot retrogress.

As illustrating the teaching of revivalists on this point the following passage from Sir G. G. Scott is quoted:

"The magnificent dormer-windows so frequent in French buildings form a noble feature in street architecture, and are readily translatable into an earlier style than that in which they most prevail." [1]

This illustrates the view taken by one of the most eminent of the revivalists—and one too, be it noted, whose views were broad enough to embrace the later styles—that all inspiration obtained from this source *must be taken back* to the thirteenth century, rejuvenated and remodelled. How would this work in practice? Should we not find ourselves travelling in a circle? For immediately on the fifteenth century feature undergoing the thirteenth century transmuting process, it would begin to develop and presently find itself at the sixteenth century stage, when it would again have to pass through the purifying fires of thirteenth century, only to become again "debased" when the circuit was completed.

In "Modern Gothic Architecture" Mr. T. G. Jackson says:

"Late work is again in fashion, though treated, it need scarcely be said, in a very different spirit and more scientific way than in the time of Pugin; and so we are at last brought down again to the very verge of the Renaissance, while the more adventurous already peep over the edge, and are more than half resolved to plunge in." [2]

The other alternative is to return to the interminable circuit above mentioned. Does it seem unreasonable to advocate pushing on from the sixteenth century *at once?* If life were not so short we might venture to toy thus with such pretty

[1] "Secular and Domestic Architecture," chap. v., p. 173.

[2] Chap. i., p. 5.

archæological puzzles. But it would be more profitable for us to discover the form which the French dormer of the fifteenth century would assume in this nineteenth century, and then fairly set on its way, with its six hundred years' start over its unfortunate translated brother; it would contribute its quota towards the architecture of the future.

In venturing to differ from so eminent an authority as Sir G. G. Scott, it may be said that the position taken up by the revivalists generally in their writings, especially by that master, was so advanced that, where this occasional thirteenth century weakness occurs, it attracts attention. Without speaking disparagingly of any of the many able men who have distinguished themselves in resuscitating early Gothic work, it may be remarked that their writings are very far ahead of their practice. They expressed their thoughts in their writings, but often failed to embody them in their works.

At the time of the revival, when our architects acknowledged that there was such a period as the fifteenth century, all that was built by them was—or at least was intended to be—in conformity with it; and when the Houses of Parliament were to be erected, the style of the fifteenth century was selected as being the most suitable. But that great effort seemed to be the apotheosis of Perpendicular work, for thenceforth it was removed from our sight and ken, as though it had never been, and nothing but thirteenth century work would meet the dilettante taste of the day. Anything later was "debased;" professional men *said* so, and the outside public acquiesced. To show any leaning towards late Gothic was to proclaim oneself a Philistine. Sketch-books were seldom defiled by examples of it, and should some architectural student indulge in sketching a bit of fifteenth century work, he was frowned

upon and duly admonished. His mild plea of "not knowing that it was wrong" served perhaps to ward off the greater anathema, but it would not avail him much against the unanimous verdict of his fellows, that he had "gone wrong." And coming to later times, one would be poorly rewarded by a search for examples of fifteenth century work in the earlier volumes of the Architectural Association Sketch-Book. It was not considered "pure" enough to sketch or measure. Pugin would have been considered a much greater man if he had not unfortunately "tripped up" at the fifteenth century! So, for the second time in our history, we entered upon the task of revivifying our national style; and as at the first we swerved into Italian, so in later days we have deliberately gone back to Early English. Neither course has answered. Do we feel equal to a third attempt? The immediate future must decide for us.

Under the heading of "A Brief Glance Backwards" ("Building News," January 5th, 1894) the following occurs:

"There has been no real growth in art in England since the close of the fifteenth century, because there has been little real growth in the social life of her people. With the renaissance of that life will come a spontaneous renaissance of art, and meanwhile the honest artist recognizes it, and is truest to himself when he turns to the careful study of the best examples of the past. That has been the secret of the good work done by men like Burges and Scott, E. W. Godwin, and others. That is the basis of the teaching of Ruskin and Morris, and in these pages through many years, of C. Bruce Allen and J. B. Waring. The fruit of it all is coming presently. When and how we cannot tell, except that it will be when a great change in our social surroundings has made it possible."

It might be, as before suggested,[1] that these men, together with other leaders in the Gothic revival, whilst engaged in

[1] See p. 51, *ante*.

what they believed was an end, were really only working on a means to that end.

Mr. G. Aitchison ("Transactions of the Royal Institute of British Architects," 1st Series, vol. viii.) observes :

"We have almost to re-create architecture, since the main current was stopped in the fifteenth century, to make it express our advances in knowledge, taste, and ideas. In Italy, which was once the centre of the arts, architecture fell into the hands of scholars, antiquaries, goldsmiths, sculptors, and painters, who were quite innocent of the first elements of construction and of architecture, but who tried to pick up some knowledge of them from the Roman ruins. The last Roman monuments were built a thousand years before. If modern doctors were to ignore all that had been learnt since the time of Hippocrates, or the engineer since the building of the Tower of Babel, they would imitate the procedure of the Renaissance architects."

Professor G. Baldwin Brown (May 18th, 1893,) says :

"There has been a certain easy-going eclecticism in fashion among architects which has made them ready to build in every style in turn. It is true that an openness of mind, so complete and colourless, no longer satisfies the conscience of the profession, but it is still the case that architecture is passing through a phase of experiment, and we coquette and flirt with styles without embracing any one of them with real ardour. We might do worse, in some respects, than go back to the time, not so far distant, when devotion to the pointed arch became a religion. . . . . There is an eclecticism that only dresses itself in the rags of men of past ages; but there is a better electicism that has penetrated behind these outward forms to the spirit which has animated all the great achievements of the constructor's art. . . . . In the history of architecture, rightly understood, there is no past. The old problems change their aspect, but under their local differences the essential similarity remains. There is still, as ever, the task—the social, religious, national need, which the architect is called upon to supply. There is *still*, as ever, the material—it matters not whether clay, or timber, or stone, or iron —which has to be moulded into a form at once of use and beauty."

In a paper on "The Polychromatic Decoration of Various Buildings," read by Mr. J. P. Seddon (April 5th, 1880), it is curious to note that not until nearly the end of it does he mention that part of the subject relating to external polychromy, and that he dismisses it in a very few words. He warns us against imitating the ancients, because of the want of durability in their methods, and says that external polychromy must be in the material of construction, and as "a grain of practice is worth an ounce of theory," he refers to his own attempts in that direction at Aberystwith, where he used for the purpose "rich red bricks from Cardiff, black ones from Staffordshire, and buff ones from Ruabon, with yellowish and bluish-grey freestones." This gives a very good idea of what the views of a Gothic revivalist were a few years ago, but further on he mentions mosaics and ceramics as possibly playing an important part in the future.

This love for whatever beauty is obtained from the use of brickwork is shared with Mr. Seddon by nearly all the architects of the revival. Mr. G. E. Street says :

"It has been by far too much the fashion of late years to look upon brick as a very inferior material, fit only to be covered with compo, and never fit to be used in church building or, indeed, in any buildings of any architectural pretensions."

And again :

"The interior of the church of San Zenone, Verona, is lined with brick and stone, just as it is outside, and the effect is most satisfactory; indeed, this and the interior of the baptistry at Cremona, still left in their original state, show how noble an effect of colour may be given by brick, internally, and how mistaken we are when we cover our walls with undecorated plaster" (p. 395).

It is hard to see why we are compelled to go from one extreme to the other. Surely decorated plaster must be

artistically preferable to plain brickwork. It was not an uncommon practice for the mediævalists to colour brickwork, artificially reproducing the joints by colour ; and so generally necessary did our forefathers consider the covering of wall faces with colour—the exterior as well as the interior—that they carried it to what appears a ridiculous extent ; colouring outside brickwork seemingly to give it a finish, without which they did not consider it complete, even though securing thereby an appearance in no way superior to that it originally possessed ; decorating brickwork with imitation brickwork, an example of "truthfulness" which is commended to the extreme purists among us, who have no scruples in decorating plaster on brickwork with a treatment intended to suggest the jointing of stonework. But with regard to covering brickwork with a material so superior to plaster as marble, opposition to it cannot be regarded but as arising from no other cause than the desire to be consistent. It is scarcely credible that the primary idea in using marble slabs was to hide construction; it was because marble was so superior to brickwork, so much more pleasing both to the eye and to the mind, that, wherever it could be afforded, it was employed? Except in buildings of the very first importance it should never in this country be used constructively ; it savours too much of waste. Why should a block of marble, with its wealth of beauty, be built into a wall to share, in common with brick, the subservient purpose of helping to make the building secure? Why, instead of exposing its one face of three square feet as its contribution to beauty, when by cutting it into slabs and putting bricks to do the menial work it could present ten times that number of feet, it is difficult to understand. We consider marble used constructively is too great a sacrifice to truth, and one which is not required of us.

Mr. E. M. Barry says :[1]

"It would not appear that the Italian Gothic architects had much affection for brick surfaces in themselves, being always ready to cover their walls with veneers of marble, according to the means at their disposal. This was of course an application of a covering more foreign to the structure of the walls so treated than cement or plaster. The truth is, it is impossible to lay down absolute rules in such matters. Architecture should satisfy the reason, and should please the taste; and all the precedents in the world will not make a man like that which his soul abhors" (p. 364).

And again,

"Perhaps we have rather too much enunciation of abstract principles in the matter of surface decoration. The use of gilding, or of costly materials, such as marble, will be reasonable in some cases, and objectionable in others" (p. 376).

The fact is, truth seems to be ignored when we use marble, or any other rich material, as a facing to brickwork, and what the exact difference is between lying to a depth of six inches in a wall or to a depth of only one inch is one of those niceties of ethics which ordinary intelligence fails to exactly appreciate. There is this advantage, too, in the use of slabs: they show—or can be made to show—that they are not structural. No deception is intended, nor is any necessary for effect. If the reasoning of those who look askance at marble incrustation, or casing with vitrified stoneware, etc., be admitted, it would condemn the principle overlying the use of the means by which nature often clothes her anatomy; and the rude rock must ever be exposed to view, never the soft lines of the coloured veneer with which she often conceals it. In fact, has not this anatomically architectural view of truth become rather nauseating—the shibboleth of a fast-dying-out school of ultra-purists, whose aims, though worthy of much praise, were all too

[1] "Lectures on Architecture."

finely drawn in theory, as they were impossible in practice. Truthfulness in construction, in design, and decoration is not to be undervalued—all honour to those who champion its cause, however far they may have travelled in the path of the faddist—but however brightly the "lamp of truth" shines, and however unerringly it points the way in the world of ethics, it is not quite so luminous in the architectural world, and our humble position should, at least for the present, be among those who ask, with "jesting Pilate," "What is truth?"

Mr T. Gambier Parry (December 23rd, 1886,) observed:

"A thing of colour is a thing of life. A colourless thing in Nature, if such there be, savours more of death than life. In art a colourless thing is but a passionless abstraction. It may be both pure and lovely, even though the idea of life may have no part with it. But, as life is better than death, so are things that represent it; and as Nature without colour is inconceivable, so art without colour is incomplete."

But we English have been slow to learn this. In his "Brick and Marble in the Middle Ages" (2nd edition, p. 20) Mr. G. E. Street, in referring to the partiality of the Swiss for coloured tiles, says:

"Unhappily we have to lament that English people, in their insane hatred of bright colours, if they saw such tiles used in England, would be horrified at such a violation of the correct simplicity and uniformity of colour to which the cheapness of slate has made them accustomed."

The following is an interesting passage in Fergusson's "History of Architecture":

"This want of faith may be reasonable, but it is fatal to poetry in art, and, it is feared, will prevent the Aryans from attaining more excellence in architectural art at the present time than they have done in former ages.

"It is also true that the people are singularly deficient in their appreciation of colours. Not that actual colour blindness is more

common with them than with other races, but the harmony of tints is unknown to them. Some may learn, but none feel it; it is a matter of memory and an exercise of intellect, but no more. So, too, with form. Other—even savage—races cannot go wrong in this respect. If the Aryan is successful in art, it is generally in consequence of education, not from feeling; and, like all that is not innate in man, it yields only a secondary gratification, and fails to impress his brother man, or to be a real work of art."[1]

In an address delivered by Mr. Waterhouse (January 19th, 1891), he remarked:

"It is a most interesting question to us, how far the application of pigments on the buildings of antiquity enhance their beauty. One is tempted to feel that the mediæval art . . . . could not have been always improved by the colour with which it was frequently overloaded. I prefer its present aspect; but it must not be overlooked that time has been busily at work, not only in the effacement of the original pigments, but in treating the work with a colour decoration of its own, by accident and weather stains."

Mr. Waterhouse went on to recommend a glazed material. Professor Aitchison and others who spoke after were agreed as to the advisability of this course.

Owen Jones observes:

"The architecture of our fine Gothic cathedrals has lost half its beauty from the absence of colour; he who, without prejudice, sees for the first time a Gothic building picked out in colour, will be forced to admit, that until then he had not understood or appreciated Gothic architecture."[2]

In Mr. T. G. Jackson's opinion:

"Decoration by stained glass was to northern Gothic what decoration by fresco-painting was to southern Gothic. Each of these modes influenced the style of architecture to which it belonged so forcibly as to affect the very design and plan of the buildings: the Italian adopted every modification of plan that would increase the amount of his flat interior wall-surfaces, and

[1] Vol. iii., appendix, chap. v., p. 525.
[2] "Lecture on Decoration," 1851, p. 5.

give more room for the painter's work; the northern architect gave all his attention to the production of a building in which the flat surface and solid wall should be as little and the voids for windows as great as possible; till at last, in the fourteenth and fifteenth centuries, the northern Gothic churches became mere frameworks of slender piers; lanterns of stone glazed with rich fields of painted glass, shimmering like tissues of silver, or blazing with the hues of the sapphire, the ruby and the emerald."[1]

Again Mr. Jackson remarks:

"But the point which I wish especially to illustrate is not that we are to cultivate painting and sculpture as a mode of escape from a lifeless architecture, but that by combining the three arts we shall be most likely to succeed in restoring our dead architecture to life; that by making use principally of painting and sculpture to decorate our buildings we shall not supersede architecture altogether; that the real consequence will be that we shall not only introduce true and natural decorative work, but shall also do much towards reviving our architecture itself."[2]

Sir G. G. Scott also says:

"We had for years been going on under the impression—so far, at least, as concerns our public buildings—that the plainer and more devoid of colour the material, the more pure and chaste would be the building; we had fancied a plain and uniform stone-colour essential to our exteriors, and a quaker-like drab the most classic hue for interiors. Suddenly, however, a new light has come in upon us. We find that the builders of our cathedrals delighted not in stone-colour, but covered it with rich tinctures whenever the opportunity offered; we find, even, that the pure and pearl-like marble of the Greeks was similarly enriched—indeed, that in no style of architecture has monochromy ever been deemed a beauty. The discovery appears to have driven us to desperation! The lovers of the stone-colour still denounce any departure from it as barbarous, and declare it impossible that the builders of the Periclean or the Edwardian ages could have perpetrated it."[3]

[1] "Modern Gothic Architecture," chap. v., pp. 140, 141.
[2] *Ibid.*, chap. vi., p. 185.
[3] "Secular and Domestic Architecture," chap. iv., p. 75.

It was strange that the greatest incredulity was manifested when it was first realized that the ancients of the Classic periods, and also the mediævalists, used externally either pigments or transparent stains; and when proof upon proof was given, and it could no longer be gainsaid, it was boldly affirmed that in so doing they made a great mistake. Here is as clear a case as needs be of the tyranny exercised by prejudice. The modern revivalists of both styles never dreamed of using external polychromy in this manner. We never conceived of the old buildings being so treated, but believed them to have been left by their builders mere colourless abstractions. Such a hold has this erroneous idea upon us, that we still find it difficult to accept the fact in its fulness, and we apologize for the old builders. They were masters of form, we say, but children in the use of colour. And so we leave the *false* precedent enthroned and the *true* one ignored and out in the cold.

M. Viollet-le-Duc, in "Lectures on Architecture," says:

"I am not one of those who would allow that the Greeks could have adopted a false principle in the execution of works of art; and if we find them adopting modes of procedure that are apparently strange, and to which we find it difficult to accustom our eyes, I should rather believe in the imperfection of our senses than in an error on the part of those masters in art."[1]

And this is the position which should be taken.

It would seem that the Greeks and the Goths held strange notions on the subject. They did not care to leave the polychromatic decoration of their walls for nature to finish for them; they looked upon their buildings as works of art, and therefore coloured them themselves, leaving to time to accomplish for their colouring what we moderns generally leave for her to do with our non-colouring, *i.e.*,

[1] Vol. i., Lecture VII., p. 247.

to tone it into perfect harmony. They evidently did not believe in confusing the colouring of an art work with the natural tints acquired by time.[1] We carry our art up to a certain point, and there stop and leave it for Nature to finish. It may be wise of us to do so. That is another consideration. But this was not the method adopted by any nation of antiquity. It is a pity for us that we made the mistake we did; for had we supposed that external colour was so universally applied, we should not have been able to tolerate a colourless building—such is the power of association of ideas! But kindly Nature, when she has a free hand, does to a certain extent correct our mistakes. She *will* have colour; only this is not "Art" but "Nature." Art presumes an artist; and no artist can claim credit for the golden lichens and mosses, chemical stains and other beauties, which, as Nature's work, we never cease to admire. But it is seldom that she has a free hand. By far the larger number of our buildings are erected in towns, where she is handicapped, and it is for these that the use of vitrified material would mean the difference between brightness and gladness, and dinginess and depression.

It is quite true, as is often urged against the use of such materials, that Nature will have nothing to do with them; but, as she can have nothing to do with any other under

[1] The love for and appreciation of these tints are curiously shown by the following remarks of the author of "Homes in City and Country" (Charles Scribner's sons, New York, 1893):—"Bricks of every conceivable colour may be found, and terra-cotta to harmonize with them. I [John W. Root] have seen bricks manufactured in the west, having the exact effect of green mosses, or the various tones given by small flowers and lichens adhering to stone, or else having surfaces black and burnished with metallic lustres. Bricks are used in the Prairie Avenue House (Chicago) which are made of fire-clay burnt to vitrification. Their colours are warm golden browns, with very considerable variety, the surface being slightly rough."

such circumstances, this is surely worth consideration. Not a seed will germinate on them we are told; but neither will soot cling to them. They do not improve by time; but then they do not become offensive. If we do not feel equal to the task of making the colour of our new country houses harmonize with their surroundings, let us at least try the comparatively easy one of finishing our town houses, where comparisons are not so easy, and the worst that can happen is that the "adjoining owner" can take the colour out of our building, or what is quite as likely, we may take it out of his. Nothing more or less than the chance which painters take at the exhibitions. Were this distinction of material made, additional point would be given to the adage that "God made the country, and man made the town."

M. Paul Sedille—"Transactions of the Royal Institute of British Architects," 1887—makes the following remarks:

"The true polychromy at which we aim can therefore only assist us in formulating more thoroughly our contemporaneous architecture. This architecture, the expression of a new civilization and new requirements, should be realized as much with natural materials as with the varied products which science and industry now place at the disposal of the constructor, employed with logic, and honest harmony of aspect. Coloured materials, such as granite, marble, stone, metal, and wood, allied with terra-cotta, enamelled pottery, and all the fire-tinted products will render modern polychromy as lasting as the edifice, of which it will be, one day, the inseparable adornment."

Mr. E. M. Barry says:[1]

"The great opponent, however, of colour in English architecture is the damp atmosphere, and the smoke and dirt of our great towns. Public buildings with us begin to lose their beauty almost before the scaffoldings are removed, and the most delicate details, whether of carving or of colour, are the first to disappear in dismal

[1] "Lectures on Architecture."

smears of blackness. Until some improvement can be obtained in this matter, the architect's work is somewhat disheartening, and all delicacies of expression in external work are, to a great extent, put out of his reach. In this scientific age will no one spare a little attention to help us?"

The advisability of consuming smoke instead of ladening our atmosphere with it is beyond contention, but at present it escapes and works the evils referred to in the above quotation. The architect's struggle with the smoke nuisance is similar to many a one he has with Nature's forces, and before he appeals to science to help him, he should be quite sure that he has done all that is possible to help himself. Speaking as builders, we could defy smoke with such a defensive armour as vitreous materials would afford.

The following extracts on this subject are from the Transactions and Journals of the Institute of British Architects: and they are given a place here, in preference to what would be their proper position, in order that they may supply the evidence as to the use of "essentially modern materials," having the authority of that body.

Speaking of iron as a building material, Mr. G. Aitchison says:

"As a material for the construction of houses, iron offers the inestimable advantage of being incombustible; could' we then eliminate the woodwork, we should not only be saved the annual expense of insurance against fire, but relieve our minds from the unpleasant thought of being burnt to death. I believe that some kind of incombustible fibrous slab might be used as wall linings, but as yet we have no substitute for flooring boards; though cast-iron is incombustible, it is not fire-proof, it shares this disadvantage with wood, stone, and brickwork, in cement, in short, there is nothing absolutely fire-proof but bricks and mortar. . . . .

"One of the objections to the use of iron is its rapid oxidation when exposed to the weather, this rusting is not only offensive to the eye, but, where thin wrought-iron plates are used, would rapidly

destroy them, and we have consequently to paint the exposed surfaces. But why could not cast and wrought-iron work be covered with glass or porcelain enamel? we might then have the external ironwork thoroughly protected from the weather, and ornamented in gold and colour.

"Saving of space is an object that should engage our utmost attention. . . . . Supposing that land in the centre of the trading part of London is worth only £5 a foot, although in some cases it is worth £30 a foot, then each foot converted from unprofitable into profitable space would, at five per cent. save only five shillings per annum; but as each foot of land has at least four profitable stories over it, we should gain probably five times that amount in rent, besides the incidental saving in time, shoe leather, wear and tear of the body and irritation of the mind. So that I might not overstate the case I have taken, as an example, a house I have lately built in the heart of the City, about 16 feet wide, 27 feet deep, and 51 feet high from the pavement to the top of the coping, its area is 426 feet, and the space occupied by the walls about 93 feet, or rather more than one-fifth of the whole area; we might construct these walls of iron only 4 inches thick, or reduce the unprofitable space from one-fifth to one-twenty-first part of the whole area, by which we should effect a saving of about £90 a year in the rack rent, supposing that the iron could be executed at the same cost as brick or stone. The house is lit by a narrow street in front and by an area at the back. One of the usual disadvantages of City houses is the want of daylight, and this light can only be obtained by enlarging the windows. . . . .

"So greatly has iron intruded itself, even on our profession, that one rarely sees a large building being erected without iron columns and iron girders: if, then, these are introduced, what excuse can be made that the work is not logically carried out, and iron adopted in every part where it can be successfully applied? It is only because proper attention has not yet been given by architects to the material. It is in vain to say that it is because of its liability to decay, for if it is introduced in columns and girders, the decay of these will as soon ruin the building as if the whole were constructed of it, and whether the profession choose to frankly accept it or not, I feel assured that it will come, sooner or later, into general use, and it is better for us to yield with a good grace to inevitable necessity, than to be gradually superseded or

forced to use it by those whose judgment we consider inferior to our own. . . . .

"We admire the exquisite art of the Greek temples, but they only excite our contempt and ridicule when executed here in the present day; and, although the copies or paraphrases of building in the later styles may be less sublimely ridiculous, they produce in our minds an exactly opposite effect to the originals. In the originals we see an expression of the thought, and taste of the period; in the copies we only see the want of both. If we were asked whether a people who had discovered twenty new sciences, who were quiet, orderly, and peaceful, averse to outward show, with a peculiar literature, rather unbelieving than bigoted, the bulk of whose work was done by complicated machinery, worked by steam and electricity, would adopt the architecture of an age in which science was in its infancy, whose people were turbulent and quarrelsome, in whom the love of war was a predominant passion, almost devoid of literature, passionately fond of outward show and personal adornments, who wore armour, and in whom personal prowess was one of the greatest virtues, credulous as children, bigoted, cruel, with a few simple machines and instruments, and who knew of no powers but those of the wind, water, and animal strength, should we not indignantly reject the idea? But such unfortunately is the case, and archæology has usurped the place of architecture. At first sight this may appear a matter of small moment, but, in reality, it cuts at the very root of true architecture, and has made it a mystery of which only the initiated can judge. It has disgusted the bulk of the people, who take the same interest in it that they do in heraldry; it has crippled the natural powers of the architect by throwing his energies into a wrong direction, forcing him to waste his time in learning what other men have done in other countries and other ages, and leaving him helpless to deal with new forms and new materials in this, and far behind in the rapid progress of new methods of construction—the great body of the people have treated him as a trifler and a pedant talking a language they did not understand, and a new race of architects have sprung up, who, pushing him rudely aside, have thrown art and beauty to the winds; and under the name of engineers, and the protection of science, have carried construction in the new materials to a point of marvellous excellence, and have filled the world with abominations of ugliness.

"So long as we profess to be architects, so long do we profess that we are able to give beauty to the necessary forms that new wants, new adaptations, or new materials require, but so long as the present engineering monstrosities cover the town and country, we confess that we cannot substantiate our pretensions. I do not wish to be misunderstood—I do not deny that we could put the ugly construction into an ornamental box, or, leaving its hideous outline, ornament it with triglyphs or cusps, but we cannot make the thing itself graceful or elegant. The Greeks clothed their rude construction with a beauty we still admire. The architects of the thirteenth century not only made a revolution in the art of construction, but threw their new construction into new forms, and covered it with new ornaments; and not only succeeded with their chief buildings and cathedrals, but made even their military works picturesque; and the admirers of that style praise the beauty of their bridges, their parish churches, their private dwellings, and their domestic furniture.

"Has then the human mind deteriorated, and are we incapable of making our new constructions beautiful or picturesque? Is the saying of Victor Hugo true, that printing has killed architecture? I trust not; our engineering works and our mechanical inventions show us that in these respects we can rival the middle ages, and I fervently hope that we may find that it is only through a sort of infatuated perversity that we are now so wanting in artistic invention. The conservatism of mankind is so great that it is only at certain periods of intellectual convulsion that men will dare to doubt and think. Doubting is the first great intellectual virtue, which apparently few architects have reached. The happy invention of Palladio has given us a dispensation from thinking. The sculptor-architects of Italy had admired the fragments of antique sculpture that were continually being found, and had endeavoured to transfer some of that elegance and grace into their buildings, but it struck Palladio that if so much grace was given to buildings by a little study of the antique, how beautiful they must be if they were copies. The same happy induction as that of the Irishman, who made his apple tarts all quinces. From that time architecture has been blighted by a servile desire of imitation; we have tried Egyptian, Greek, Roman, Byzantine, Romanesque, Gothic of all periods, Italian and French Renaissance, revived Roman, Arabic, Chinese, and other styles. Let us

now throw aside all our old traditions; let us hold in abomination the five orders, coronas, triglyphs, curled cantilevers, the egg and tongue, and the acanthus-cusps, crockets, and the pointed arch; and if we have no taste or artistic invention, let us boldly confess it, and be proud of saying: 'An ill-favoured thing, Sir, but mine own.'"[1]

And again:

"We are and ever have been, an unartistic race, but it is also an unartistic period of humanity, no new creations in art have appeared; but there is one step we can take, and that is to throw off tradition and emancipate our minds, for in art whatever is not new is not true, and we should at least give up our school-boy exercises and cease to paraphrase some old dead style. Let us dare to think for ourselves, even if our efforts are unsuccessful; let our works be uglier than they are, only let them be original, and if we can make no progress let us be plainly simple or simply plain. In iron we have a perfectly new material, untrammelled by old shapes or fitted to old arts. This age is a sort of Midas, everything it touches seems to turn into iron; architects alone eschew it and cover it from sight, or seem to apologize to themselves and the world for being obliged to use it when they would have used brick or stone, and yet it is being forced on us; iron sheds, iron houses, and iron churches meet us at every turning, hideous if you please. Our problems are like those of pure geometry; we have to make things beautiful under certain restrictions, and why should we not boldly face the problem and unite our efforts in overcoming the difficulties that surround its use, and instead of letting it be our master make it become our slave. Cast-iron will take any form required: in that respect there is nothing further to ask from it, and it has everything to ask from the designer; its only defect is that at present we cannot get the sharpness of bronze because it is too hard to chisel and file; its other defects are that it rusts, that it transmits heat very rapidly, and in damp weather condenses moisture. If one half the time that is expended in copying the mouldings and ornaments of mediæval works were bestowed on endeavouring to solve these problems we should have done them long ago. I appeal to the mediævalists amongst us. Are you not taking the very opposite

[1] Institute lecture, February 29th, 1864.

course to that followed by the men you imitate? Did not they set tradition aside and use their brains to throw old materials into a new shape, to acquire all the arts by which the materials they had could be made their servants and be fashioned to their wants, to invent new forms and new effects? Let us try to imitate their splendid audacity in construction, their unrivalled skill in perspective effects, their knowledge of the composition of masses and picturesqueness of outline, and their brilliant inventiveness; and not set up imitations of their works as monuments of our own imbecility, nor seek to make fetters for the present generation of the works of the most daring innovators the world has seen. Is it to be supposed that if the great mediæval architects had possessed the powers of casting and rolling iron that we possess, they would have shown their incapacity to use them because the Romans were unacquainted with their use? Was it by servilely copying the Roman forms and making their civilization fit into the discarded Roman buildings that their splendid original buildings were produced? They were not soldier-crabs to fit themselves into the empty shells of others, and if we really wish to imitate them it is by adapting the old and new materials to our present wants and our present civilization. If we want art we must study the works of the artist-nations. We must go to Greek, Arabic, and Italian works to learn how common forms are conventionalized and purified, for subtlety of proportion, grace of moulding, or amount and placing of ornament; but to create we must go only to ourselves, and not ignore the material or mental wants of this age, or else we shall be left further out from the tide of human progress than heralds, necromancers, astrologists, or professors of other defunct arts. . . . .

"I fancy that if architects would devote themselves more to the use of iron, they would find there was a great charm in designing the skeleton of their buildings in this material, and there is a great saving in the space otherwise occupied by walls. Once protect iron from rust, and what novel and beautiful buildings might be constructed of an iron framework filled in with glazed tiles on both sides with a space between. What charming ceilings might be made of ornamented iron ribs filled in with small domes of china or pottery! What spans of rib and panel vaulting! What domes filled in with thick glass in beautiful patterns!"[1]

[1] General Conference of Architects, 1871.

The following remarks on iron as a constructive material are by Mr. C. H. Driver:

"Though the use of iron by architects in building structures has enormously advanced, the credit of discovering and applying the great advantages that iron unquestionably possesses over almost every other material to constructive purposes, is due, I think, to the engineers and not to the architects. Architects as a body have neglected and slighted this universally useful metal, either rejecting it altogether, or employing it as it were under protest, and as if they were ashamed of it. They use it, in fact, as a drudge, and not, as I venture to think they should, as a valuable friend, equal indeed to most other building materials and superior to some; valuable both for constructive and decorative purposes, and I apply these terms in the same sense as we employ them when speaking of wood, stone, or any other material we use in building. And while it is remarkable that we should have thus neglected it, the way in which engineers seized it is no less remarkable, for they with wonderful acuteness brought their science and practical knowledge to bear upon it, producing results that ought to be an example to us; for as a rule engineers, with regard to brick or stone, pay us the compliment of copying as well as they can our architectural forms and practice; but with respect to iron the reverse is the case, as they, finding that architects had done, I will not say could do, little or nothing with it, struck out a path for themselves, and, it cannot be denied, have achieved in it a great success. I think, however, it is unfortunate to some extent that they did so, for it is in a great measure the cause of the want of appreciation iron obtains from architects, not because architects are jealous of the success of the engineers, but rather because of the disgust they feel at the inartistic result of their labours. Can this be remedied, and can iron be placed in its proper position with regard to architecture? I venture to hope it may, by taking advantage of the practical skill and knowledge which engineers have already obtained, and upon the foundation laid by them, advancing step by step, till we succeed in finding uses for iron both in construction and decoration, which, while perfectly adapted to the material, will yet combine and harmonize with those we have heretofore had in use. . . . .

"Reverting for a moment to the point that the constructive

employment of iron is of comparatively late date, one significant fact is worthy of remark, viz., that the artists of the middle ages had brick and stone and other materials, but no iron, at least not in quantities they could make structural use of, and they made such good use of the materials they had that we are fain to copy them. Is it not therefore fair to suppose that if they had had iron at their command as we have, they would have produced works in that material as admirable as their works in others? I am justified in assuming this from the wonderfully beautiful works they achieved in the ornamental wrought-iron work they did make. I cannot help therefore feeling that to a certain extent the poor results we have accomplished with all the facilities we have at our command does not indicate much progress of true art in these modern times."[1]

A query in the "Journal of the Royal Institute of British Architects" (December 7th, 1893) relating to brick and concrete walls elicited some interesting replies; in one case, glazed surfaces combined with "iron and steel framework construction" were suggested, and it is mentioned here as one of the more recent utterances bearing upon the subject.

Also in reference to the architecture of the future a few quotations are appended:

"History of Architecture" (Mr. Jas. Fergusson):

"To give a distinct and categorical answer to such a question (what is to be the style of the future?) is of course impossible, as it would be equivalent to attempting to foresee what has not been invented, and to describe what does not yet exist. It would have been as reasonable to have asked Watt to describe the engines of the 'Warrior,' or Stephenson to sketch the appearance of the Great Western express train at the time when he started the 'Experiment' on the Stockton and Darlington line. If the style is to be a true style, it will take many years to elaborate, and many minds must be employed in the task; but, if men once settle into the truth path, success must follow, and the new style must be good and beautiful, perhaps more so than any that have preceded it. In the meanwhile, however, it is easy to reply

[1] Institute paper read April 5th, 1875.

negatively that it certainly will not be Gothic[1]—if for no other reason, at least for this: that the mediæval is a complete and perfect style, and progress in it is consequently impossible without a recurrence of the circumstances in which it was created. It was the result of centuries of continuous progressive changes growing out of the wants of the times, and supplied by the restless mental activity of thousands of minds applied through long ages to meet these exigencies. We are separated by the gulf of centuries from these times: we can neither go back to nor recall them: we can never settle again into the same groove, and, while this is so, progress in that direction is impossible. If we could forget the invention of gunpowder, and induce nations to revert to bows and arrows and plate armour,—if we could ignore the printing-press and all its thousand influences, or persuade ourselves to believe that the steam-engine is still only the dream of some crack-brained mechanic,—then indeed we might restore the middle ages, and Gothic architecture might become again a living form in such a state of things; but, till all this and more is done, it must remain only a fragment of the past, utterly strange and uncongenial to our habits and our feelings—an amusement to the learned, but taking no root among the masses, nor ever being an essential part of our civilization. On the other hand, the more we study the architecture of the past or become familiar with its details, the more enamoured must we be with so honest and so earnest an expression of human wants and feelings, and the more incapable are we of emancipating ourselves from its particular influence. This we already feel; and every day we are becoming more and more correct as copyists, and more and more intolerant of any deviation from the exact types of the middle ages.

"The same is true of the pure Classical styles, from which we are separated by even a longer interval of time, and also by a geographical barrier which renders them unsuitable for our climate. But it is not quite correct to say that our sympathies are not equally engaged by them. The educated classes, at least, know more and feel more for the age of Ictinus than for that of William of Sens, and are more capable of appreciating that of Vitruvius than that of Wickham or of Waynflete. But be this as it may, the Classical is also a perfect style, and progress in it is unattainable unless we can put ourselves in the position of the Greeks or

[1] This depends upon the precise meaning given to the term "Gothic."

Romans when they were elaborating it, and without progress it is impossible to adapt any art really to our use or purposes.

"It need hardly be added that all this is even more true as regards the Saracenic, the Indian, the Chinese, or Mexican: but there is yet one other style within whose limits progress still seems possible. The Renaissance Italian is by no means worked out or perfected, and, from the causes pointed out in the preceding pages, has hardly yet had even a fair trial of its merits.

"Originally it was a compromise between the Gothic and the Classic styles, borrowing the forms from the one, the details from the other; and it has in its progress oscillated backwards and forwards, from almost pure Mediævalism on the one hand to pure Paganism on the other, while in its devious course it has been adapted to nearly all the wants and exigencies of modern times.

"Within the limits of such a style as this progress seems possible; and if it is, the problem is of easy solution. It does not require a man or set of men, as some have supposed, to invent a new style; the great want now is self-control and self-negation. What we require is that architects shall have the moral courage to refrain from borrowing, and be content to think, to work, and to improve bit by bit what they have got. If some artistic Chancellor of the Exchequer would only lay a heavy tax on every Classic column erected after this date, and assess equally every mullioned window or every Gothic pinnacle employed in future buildings, we should soon arrive at a better state of things." [1]

Mr. Jackson says, in "Modern Gothic Architecture," p. 16:

"The history of modern literature furnishes perhaps the best possible illustration of the way in which a new style may arise from the attempt to revive an old one. When the Western Empire fell, the literature, like the art of Western Europe, was extinguished. The languages of the different countries passed into *patois* corrupted from Latin, with no regular structure or determinate grammar, in which a native literature was possible; while the cultivation of ancient literature was discouraged by the clergy, who alone had access to it." (P. 18) "In the next place, we know that the result of the revival of ancient literature has been not to produce the old Latin style, but to produce a genuine living style in the vulgar tongues of modern Europe, as different

[1] Conclusion, pp. 488-90.

from that of the ancients as our civilization is from theirs, and as peculiar to us as theirs was to them."

Again (p. 24):

"But, *practically*, it comes to rather more than this with us: for, although it is true, theoretically, that if we do but apply these principles to our work the results we have indicated will follow at once, and we shall be immediately in possession of the modern Gothic style we want, we are in practice incapable of applying them thus immediately. It is only through the medium of a living, existing style that mankind can carry the true principles of art into practice, and we have no such living style in existence among us. To apply these principles at once to our work would be, in fact, to create a new style, and we have already shown that new styles cannot be created thus suddenly, but must be gradually and naturally developed out of other styles that already exist. It is the peculiar difficulty of our case that we have first to adopt a dead style, and then to quicken it to life: for till it begins to revive, or, in other words, till we become thoroughly at home in it, and learn to express ourselves in it naturally and easily, it is incapable of further development."[1]

". . . . If Gothic be, as we believe it can be proved to be, the only style that is fit to be adopted for modern use, our artists must devote themselves to it exclusively, and we must accept the results that flow naturally from such a course. Although we shall differ from the Purist in our views of the proper end and object of the revival of Gothic architecture, we must for the present, as a rule, work in the Gothic style as steadily, earnestly, and exclusively as he. It is only when we discover some reason for change, when we find it unsuitable to modern habit, that we shall venture to modify the old art; and then, unlike the Purist, we shall eagerly embrace every opportunity of so modifying it, as a step onward towards the end we have in view. Gothic architecture must first be warmed to life again by constant and habitual use, and then by a natural growth it will develop itself into that form which is most suited to the habits and ideas of an altered state of society."[2]

[1] Mr. Jackson evidently recommends clinging to Gothic as long as possible, because, as he rightly believes, that not from the ashes of a defunct style are we to expect life.

[2] P. 108.

We prefer to look on the old art as *asleep*, and when it *awakens*

Professor Kerr remarks:[1]

"That the immediate future of English architecture is largely bound up with the progress of the present fashionable movement is a fact that must be looked fairly in the face. Absurd as its inferior manifestations too frequently are, palpable as are its critical shortcomings even in the most favourable circumstances, it evidently contains an element which creates popularity by meeting a popular want, the demand for miscellaneous art for the multitude—not the mob, but the public at large. Even church design may not be long unaffected by this strong motive power. When what is spoken of as Romanesque, or even Byzantine, is often suggested as the next step in Gothic modification, it is not at all unlikely that it may turn out to be some species of Renaissance—not Rococo—which shall combine with ecclesiastical solemnity a certain relaxation, in a direction more gracious than that of the mere slap-dash picturesque. In municipal buildings it is still more probable that the less severe details of Renaissance work will come to be accepted, introducing a brighter or more playful form of the standard Modern European, which may then take general possession also of ordinary street architecture and domestic design in towns. If this should so turn out, then the style of thirty years hence may be a novel Anglo-Classic, robust in general character, carefully elegant in moulding and in modelling, picturesque within the limits of repose, and at last, like the Franco-Classic, no longer exotic and anomalous."

Sir G. G. Scott on the architecture of the future remarks:

"I of course assume that the style [of the future] will be essentially and mainly of that family [our own pointed architecture], but I at the same time hold that it will be a perfectly new phase, differing more from any form that pointed architecture has hitherto assumed than any of those varieties (whether chronological or national) from one another. It will differ, not only through expressing the ideas of another age, but also from its

it will continue its work, dimly conscious that a night has intervened between laying down the tools and the taking of them up again.

[1] Fergusson's "History of Architecture," third edition, vol. ii., book iv., chap. vi., pp. 160, 161.

comprehensiveness. This must, in fact, be its leading characteristic. . . . .

"Some of these ideas may possibly appear incongruous with the nucleus on which we are working, but this will not often occur; and a living art has marvellous facility for the admission of ideas apparently incongruous, and of harmonizing them with itself. . . . .

"Not only must the different varieties of the architecture of Western Europe be laid under contribution, but the great Eastern branch of Christian art be brought to aid our own, and especially must we fill up the one great hiatus in our northern styles by making that most noble feature, the *dome*, to form a conspicuous element in our future developments.

"This, however, is but a part of the amplification which the future architecture is, we imagine, to receive; it is merely its inheritance from the *past*,—its retrospective element. To this will be added, or rather on this foundation will be built, the creations of the *prospective* element.

"All the changes in the state and feeling of society which have taken place, or are yet to arise (unless, indeed, such changes be vicious), must be provided for. All inventions and discoveries must be brought under tribute, and every new material or mode of applying it must be made subservient to the one great end; and especially must our works be enriched by the introduction of all the varieties of richly coloured natural productions which circumstances may bring within our reach. Our architecture must unite within itself all that can be learned from the past, all that is demanded by the present, and all which will be developed by the future,—the style we select for our starting-point being the bond of union which will cement all these elements into one perfect and homogeneous whole. . . . .

"Our architecture, then, must be universal in its applicability. The style which is best for the church must be equally so for the palace, the court of justice, the market, and the dwelling-house. It must embrace also engineering works, as bridges, viaducts, and railway constructions. It must influence the character of our commercial structures, as warehouses and factories, and our agricultural buildings and labourers' cottages; yet must it be so elastic as to shape itself afresh for every one of these purposes, so that while no one can say that we have a different style for the church, the palace, the factory, and the cottage, no one, on the

other hand, can accuse us of making any one of these buildings affect the character of another. Each must have its own forms and characteristics, yet a bond of union pervade the whole which will make it clear that all belong to *one* commanding, comprehensive, and all-pervading style.

"It would be superfluous to argue that one of the characteristics of the future style must be *truthfulness*. The very existence of a living style pre-supposes this. True it may be that, at all periods, *truth* has been forgotten in individual cases,—it is a part of the weakness of our nature,—but no art can be worth a thought which systematically permits such departure from principle. It is the disgrace of a period like our own which possesses no true style, and is a vice which must vanish at the advent of a living architecture.

"One of the characteristics of our age, or rather one of its vainglorious boasts, is its *practical character*. In art it has utterly failed in carrying out this feeling; still, however, there is no doubt that it *is* the aim and intention of the age to be practical, and this must give its tone to the architecture of the future. It must be pre-eminently practical, and (if I may use the term) *straightforward*. It must not strive unduly after artistic effects,—it must avoid fantastic and strange forms; it must have a simple primary aim at utility; at, in the first place, thoroughly and in the best way providing for the object for which the building is erected; and, secondly, at expressing that purpose in its architectural aspect; superadding to this so much of beauty, of artistic form, and of picturesqueness, as is evidently consistent with its purpose, and as naturally results from the forms which convenience dictates. Quaintness is not one of the characteristic feelings of the age, and should be but sparingly used in our architecture—as a grain of garlic—just to give a piquancy to the otherwise too common-sense character of our designs. All this does not preclude spirit and force pervading everything,—the more of them the better. What I am objecting to is that intentional queerness and artistic ugliness which some of our young architects labour to produce. Next to perfect fitness for its object, both in fact and in expression, *actual beauty* must ever be a leading aim in architectural design.

"Another characteristic which we may expect in the rising style, is a universality in its feelings towards collateral arts. It must open its arms wide to receive all that is good and beautiful. It

must not be for ever questioning whether the pictures, sculpture, or objects of *vertu* which are brought within its walls are or are not consistent with its character. As it must be capable of meeting all wants, of using all materials, and of adopting all legitimate constructive processes, so must it admit as accessories all that is genuine and beautiful in other branches of art."[1]

Sir F. Leighton said :[2]

"Certain it is that architects may look with a proud confidence into the future, for they practise an art raised on an immovable basis of science, clothing itself in forms of abstract beauty, enriched by the co-operation of sculpture, and yet made lovelier when it chooses by the charms of colour. And though no man shall invent a new style—as the foolish phrase goes—for styles are not invented but evolved, I do not doubt but that in due time the tentative and eclectic phase through which architecture seems now to be passing will give place to more homogeneous development, in which, whilst the individuality of the artist finds free room to assert itself, the requirements, physical and intellectual, of each particular country will achieve a more definite and distinctive expression."

Mr. Fergusson remarks :

"If men were only once thoroughly convinced of the direction in which the true future of the arts lay, the victory would already be more than half gained. At all events, I feel sure they could not advance many steps in the right path without our becoming immediately aware how utterly unworthy of the nineteenth century were the arts both of the Greeks and those of the middle ages, and once convinced how contemptible they were, the artists could not help feeling the degradation inherent in their present servility of copying. Emancipated from this thraldom, I have little fear of the arts attracting a higher class of intellect than has hitherto been applied to their cultivation ; and these two requisites obtained, I do not fear in the least the discovery of the third. Earnest search after the beautiful by men of a high class of intellect could not long exist without the discovery being made of the direction in which it

[1] "Secular and Domestic Architecture," chap. xii., pp. 271-276.
[2] Royal Academy Discourse, December 10th, 1879.

is to be sought after, and where it certainly will be found by those that seek it in sincerity and truth; but it certainly will not be where it has been found and worked before, but in some new and loftier sphere, where the virgin ore is still concealed in its original matrix."[1]

From Mr. Waterhouse's presidential address (November 5th, 1888), before referred to, I give the following:

"It has been left to us to copy ancient monuments, not like the church builders of Byzantium and Venice by boldy robbing other buildings to create fresh architectural marvels out of the materials thus provided, but by reproducing old forms with more or less ability, but also with more or less inappropriateness. Does it not behove us occasionally to consider this question seriously, and to ask ourselves to what good end this eternal copying and adaptation is to lead? We see that in America they are shaking themselves free from tradition. No doubt it is comparatively easy for them to do so, but are we to allow them to monopolize the guidance of common-sense in architecture? May we not also make greater efforts than we have hitherto done to express the purpose of our works in a language of our own; to clothe our buildings not in the cast-off garments of bygone ages but in materials cut out and fashioned to suit ourselves and our needs? We may love and reverence the past as archæologists, but as architects let us not forget that archæology is the bane of living progressive architecture, and that if our art is ever again to evoke popular enthusiasm it must do so by embodying the thoughts, the aspirations and the genius of the living people for whom we build."

Mr. Eidlitz says:

"Renaissance aberration has established this one principle, however, that architecture as an art is dead; that we may work in styles, that is, we may masquerade our structures in old forms, or in whatever we may imagine to be a substitute for these old forms, or in whatever will pass current as such among men. We must, in

[1] "An Historical Enquiry," p. 173. This beautiful form of expression is singularly appropriate as indicating the probable direction of the future of architecture; without attributing to him prophetic vision, it is at least remarkable that he should have used this particular metaphor.

short, cease to *think* upon the subject, and do it all by *feeling*, by inspiration, by virtue of taste.

"It is wonderful that three hundred years of this inspiration and this taste have brought forth nothing more nor better than the old formula of a pair of attenuated pilasters, a bushy capital of acanthus leaves, a meagre entablature repeated over and over again in the same structure, representing at times tiers of stories one above the other; at other times embracing in one order two or three stories, or again representing nothing, a dead wall, and all this is crowned on top with that wonderful attic of round, square, horizontal, and oblong windows surrounded with architraves or wreaths of flowers. And more than this, when we have imagined this pile or a similar pile extending for miles, and a piece cut off which we call a palace, and another piece which we call a warehouse, then a large piece called a church, and again a smaller piece, called a club-house, no architect whose faith is in the Renaissance will say aught against it. It is good architecture; it is a work of fine art; it shows feeling; it is in the spirit of the masters of the Renaissance. Can this be art? Surely not."[1]

Mr. E. M. Barry also observes:[2]

"If there be anything in architecture that is worthy of the attention of earnest men, it cannot be that we are to look only to the past. We are bound to revere its memories, to sustain its glories, to protect its achievements. Its old buildings must be very dear to us; but we must still look forward. The doctrine of modern degeneracy is not to be silently accepted. It has been well said, 'if the golden age be past, it was not genuine.' Were it otherwise our energies would be paralyzed at the outset of our career. National progress assumes, it may be, forms which are new and artistically distasteful to us, and we, perhaps hastily, assume that all is wrong, and that we must try—alas! how unavailingly—to go back to that past which is gone for ever. Rather should we conclude that we have to seek in our own day the key to the enigma, and apply to the material progress which goes on around us, the refining and civilizing influence of art. We cannot go back, we cannot re-create the old buildings, which we possess as our birthright. They often tell us of a state of affairs without counterpart

[1] "The Nature and Functions of Art," pp. 350, 351.

[2] "Lectures on Architecture."

in these modern days. These things were not of necessity better than the things of to-day. If they are our inheritance, to be guarded and preserved, yet they are not to be recalled. Change passes on all things, and that which is appropriate to-day may become obsolete to-morrow" (pp. 157, 158).

And again:

"We are not called on to despair of art because the old is often better than the new. We will not forget the past, but we will do our best in the present, and also turn our eyes on the future. If the dead can speak to us, can we do nothing that shall be eloquent when we are gone? Shall it be said of us that we have only repaired the tombs of the Prophets? May we not rather draw from our studies of the past a fresh inspiration—an encouragement to new efforts of noble and elevating art? Surely there must be scope for such exertions, both now and in the days to come" (p. 159).

THREE PERIODS OF ENGLISH ARCHITECTURE.

THIRD PERIOD—AWAKING.

"There should not be one word spoken of style; in fact, the study of art history may be safely postponed to the last year of instruction; or, if the pupil has dabbled in art history before it is good for him to do so, he should be promptly impressed that what he finds there is not to be a criterion of what he is to do, but simply a statement of what others have done under circumstances which will not occur again."—LEOPOLD EIDLITZ, *The Nature and Functions of Art, etc.*, pp. 485, 486.

AWAKING.

IN the foregoing pages reference to metal as a new structural material for house building has been so frequently made that a few extracts from professional and other writers, with comments thereon, are here given in order to show what opinions are held by those who have thought about the matter, and to give an idea of the position the question occupies in the building world at the present moment. That it is one of prominence few will deny.

This will be of small interest to those who have prejudiced themselves against any building material but such as has been hitherto available, and who are ready to condemn any which was not used by the particular school of the architecture of the past which they affect. But to others, who believe that it is impossible for the science of building and the art of architecture to remain stationary in a world of progress, it might be encouraging to know that others share their hope of a release from the blighting influence of precedent, under which, ever since the sixteenth century, the whole of Europe has been in bondage. "Thus far" came with recognized authority from Italy, and was, curiously enough, obeyed at the very time when authority on matters ecclesiastical and political coming from the same source was being questioned by almost every nation in Europe, and ultimately treated by some, including this country, with contempt. But it must be

apparent to everybody who is conversant with the buildings of all classes which are springing up around us, that of late years there has been a restless seeking after novel forms. The architectural appetite seems to have become satiated by slavishly copying the old styles, and hence new ground has been explored and neglected styles, or phases of styles, which, stowed away in less frequented corners have hitherto escaped notice, have been brought out and utilized for the delectation of those who, above all other qualities in a building, must have quaintness. Sometimes one of these pretty conceits is used by itself in its *pure* (?) state; sometimes a palatable and extremely picturesque mixture is made from two or three together; no matter how, but this craving for something new must be satisfied, and consequently much thought and skill have been turned in this direction. But now it seems that even this sweetness is beginning to cloy, and certain it is that sooner or later it must cease to please and satisfy. What is to be the next step? Can it be that we have been at school all these years and that now, leaving our education behind us, we have to begin work? If such be the case the time seems ripe for the start to be made.

Mr. Aitchison says:[1]

"If it be allowed to compare the present condition of architecture, of architectural aspirations, and of architectural instruction with another time and a different desire, it may be said that Italy in the thirteenth century was precisely in the position that English architecture is now, for then, throughout the length and breadth of Italy, each poet studied all the poetry he could find, and strove to create a language in which he could enshrine the stirring thoughts and actions of his time; and eventually Dante appeared."

As Professor Kerr says:[2]

[1] Royal Academy Lecture, 1894.

[2] "Newleafe Discourses," chap. vii., pp. 128, 129.

"We began with the book—the mere dogma: then we cast aside the book for the model—the remains we determined to *examine* for ourselves: the next step—will it be to cast aside both book and model, dogma, and 'remains,' and determine to *think* for ourselves—*design* for ourselves? Let me say we are in the transition from Vitruvius to Truth; we have forsaken faith for fact; the natural next step would be to leave fact for Reason. I am glad to think it may be so; it seems to be the tendency. We hear more said of the *principles* followed in the 'authorities:' the next step is to discover that true principles are independent of the 'authorities;' and then we may hear of Nature and Reason instead of Precedent, and find Art superseding Copyism."

Owen Jones remarks:[1]

"The attempts which have been made of late years to revive Christian art, however beautiful they have been as copies of bygone style, have all signally failed, and ever will fail, to awaken a universal sympathy. . . . .

"Similar attempts to revive Elizabethan architecture have shared the same fate; and the revived Italian style, which may possibly, from being a little nearer our own times, be destined to a longer life, must ultimately fall with the rest. The universal thirst which now exists for an architecture in harmony with our institutions and modes of thought must ultimately be satisfied. It is evident, that had the ancients been acquainted with the materials and facilities of construction now at our command, had they possessed our institutions and complete control over the industrial processes, their architecture would have presented very different features to those which characterize its remains. Why, then, should we continue to consider architecture as a thing discovered once for all, and to recognize only the forms in which it has hitherto appeared? Architecture is progressive, and must keep pace with the development of the wants, the faculties, and sentiments of mankind."

Mr. L. Eidlitz remarks:[2]

"A child could not well be taught the English language if we insisted on beginning with the dialect of Chaucer, and so going

[1] "Gleanings from the Great Exhibition," 1851, pp. 7, 8.
[2] "The Nature and Functions of Art," pp. 486, 487.

on to the English of to-day. Astronomy is read at universities as developed at this time, not as it was at the time of Hipparchus. Of what use would it be to teach geography upon a map of the Roman empire, or science according to the theories of Swedenborg? There is no doubt an historical value in all such teaching, but the student cannot well commence the study of the theory and practice of a living art by a perusal of an art that is dead. The radical error is to be found in the opinion of those who teach. They do not believe that Greek architecture is dead; they would have us think that it still lives, and try to think so themselves; but it *is* dead, and so are Roman, Byzantine, and Gothic architecture just as surely dead as the language of Chaucer and the astronomy of Hipparchus.[2] These styles are all metals which have undergone various combinations with oxygen, one and all oxides of architecture; you may, if you please, apply to them the poles of your analytical battery, and extract grains of pure iron from this historic rust; but if you wish to have your horses shod to-day, *now*, because you need them, let the smith take metal from his own store, and let him forge it into shoes that are serviceable *now*, at once, lest, if he wait for the operations of your battery, the horses die before you procure iron enough out of the shield of Piramus or the spear of Achilles."

To those who are hoping for better days there may be here something suggestive and which will perhaps bear fruit. And first we have to note that the idea of a metallic building construction, which was never dreamed of till a few years ago—unless the decoration of some of the houses at Pompeii is really, as some have supposed, the translation

[1] There are two senses in which a style may be spoken of as "dead." To one of these a corpse is an apt simile, for being capable of serving no further purpose it must be put away for ever; but there is another idea of death which seems to stop short of the extreme sense of the word. The idea of a tree is that it is a living organism, whereas that part through which the vital juices cease to flow is dead, successive years add their quota to the building up of the timber by which the living organisms are supported, but it is the latest circle only which contains the life. Each country, so to speak, possesses this *timber* in its national style, the principles which lived in each are immortal. If we use the *timber* without the principles we have a dead architecture, but with them a living one.

of metallic structures into a decorative form—has passed the stages by which all things new have to travel before they present themselves to us as candidates for our serious attention and consideration, and now has its place amongst the possibilities of the future.

In 1851 a new departure in building was inaugurated by the adoption of iron as the structural material of the first exhibition building, which equalled in point of size most of our cathedrals; and, as might have been expected, it was the offspring of a non-professional man. It took the popular mind by storm. Its counterpart, it was said, could be found only in fairyland. The public would not hear of its destruction, so it was taken to Sydenham, a poetic name was given to it, and to this day it has not ceased to exert a charm over those to whom architecture is, for the most part, a sealed book.

But to the architect the building was beneath contempt. It was "only a conservatory;" it did not possess a single quality which would make it worthy the attention of the critic, or even bring it within the domain of architecture; for all that it set men thinking. But as Mr. Fergusson says in his "Handbook of Architecture:"[1]

"Art, however, will not be regenerated by buildings so ephemeral as Crystal Palaces, or so prosaic as Manchester warehouses, nor by anything so essentially utilitarian as the works of our engineers. The one hope is that, having commenced at the bottom, the true system may extend upwards, and come at last to be applied to our palaces and churches, and the whole nation lend its aid to work out the great problem. Whenever its significance is rightly appreciated by the public this result seems inevitable; and, with the means of diffusing knowledge which we now possess, we may perhaps be permitted to fancy that the dawn is at hand, and that, after our long wanderings in the dark, daylight may again lighten our path and gladden our hearts with

[1] Vol. i., Introduction, p. lvii.

the vision of brighter and better things in art than a false system has hitherto enabled us to attain."

Nine or ten years later M. Viollet-le-Duc, in the second volume of his "Lectures on Architecture," entered at some length upon the subject, illustrating his views by many drawings with very carefully worked out details. Extracts will be given from this work later on.

Spasmodic attempts to give form and substance to floating theories were made from time to time, but nothing came of them, and the only way in which iron was applied was as supports to masonry, in the construction of roofs, etc., and this application of the material became yearly more extended. Steel was introduced, and improvements effected in various ways. Several papers on the subject have been read at intervals at the Royal Institute of British Architects, and in 1880 Mr. J. A. Picton, F.S.A., read a paper at this Institute on "Iron as a material for architectural construction," and made out a very good case for it; but in the discussion which followed we find the late Mr. G. E. Street saying: "I do not think that the architect of the Parthenon would have liked iron better than marble, or that our architects from the thirteenth to the fifteenth century would have done anything of the sort" (*i.e.*, have used iron constructively); and further on he adds: "Our [the Gothicists] great object is to show the construction of our buildings in every way." So here we have Mr. G. E. Street, representing the Gothic party, repudiating metal entirely, and that in spite of all that has been said about the *adaptability* of Gothic, practically admitting that it is incapable of adapting itself to a new material. This is a damaging admission for Gothic, if true. But is it true? Would not the spirit of Gothic live in any material, if there were men capable of imparting that spirit to it, even though the material be metal?

Since that time American architects have been and still are working at the problem, and endeavouring to arrive at a solution in their own way. Professor Kerr in editing the third edition of Fergusson's "History of Architecture," in the chapters on "Recent Architecture in the United States," refers to this, but he throws no light on a rational use of iron, either in his descriptions of what has been done there, or in his remarks thereon. We infer, partly from the limited space he devotes to the subject, that he does not approve of its use, from which we make the deduction that there is nothing essentially "Classical" in iron construction. This is valuable, for although the stand taken by Mr. G. E. Street, and by other prominent Gothicists, seems to afford little hope at present that the cause will be championed by the school to which they belong, still, should such a consummation be brought about, that school cannot be charged with appropriating the exclusive property of another. In fact, it is common property, or more properly speaking, a "no man's land," to be appropriated by the first comer.

Sir G. G. Scott, in "Secular and Domestic Architecture," says:[1]

"Now, do these introductions of modern engineering belong to any one style of architecture more than another? People fancy that, because they have grown up during the prevalence of our modern Classicism, they have something to do with it. I deny this *in toto*. Is not an iron bridge, or an iron roof, more allied to mediæval timber construction than to any works we know of Classic antiquity? Has a suspension bridge any nearer relationship to the Parthenon than to Westminster Hall? Is it not a work founded on natural laws, which belong as much to one period as another? It may be said that Classic architecture being (in modern phraseology) a 'trabeated' style, it may lay claim to iron beams and girder bridges; but, in truth, Gothic

[1] Chap. v., pp. 110, 111.

architecture has as much to do with beams as that of Greece or Rome; and the only at all successful instance I have seen of architecturalizing cast-iron beams is in Mr. Butterfield's Gothic buildings in Margaret Street.

"Then, again, of the iron and glass structures so much in vogue—are they especially Grecian, Roman, or Renaissance in their idea? What should we say, for instance, of their great type, the Crystal Palace? Is it more like a Grecian temple, or a Gothic cathedral?"

There can be but one reply to this question.

A nobler Renaissance than that of the sixteenth century would be brought about if our Gothic Architects were determined to re-animate their favoured style with nineteenth century life, instead of resting for ever content to be reviving it, hoping nothing better or greater than to be groping their way back to their cherished thirteenth century style, without seeking for, or perhaps ever giving a thought to, that great possible emancipation which, at this moment, it is more than ever incumbent upon them to strive to obtain.

Is there any valid reason why the Gothic school should not initiate this work? Is not metal as natural a material as stone, brick, or wood? In fact, has it not even some advantages over them? Is it not possible to work out principles from it, as well as from them, and will it not take forms as Gothic in principle as they are capable of doing? Can one cogent reason be advanced why it should not be used?

It is astonishing how very near to the discovery of metal construction Mr. Jackson in his book, "Modern Gothic Architecture," approaches and yet stops short of it. On pages 42, 43, 44, he says:

"True, Gothic architecture gives us no example of the way in which it would have fashioned the great engineering or mechanical works of our own day; it was never called upon to meet such

requirements. But, on the other hand, the whole history of Gothic architecture is nothing but a record of novelties encountered, of unforeseen difficulties met and surmounted, of the constant self-adaptation of the style to the progress of society, the change of manners and habits, and the birth of fresh ideas and requirements. England under Henry VI. was very different from England under Henry II., and yet the art of the fifteenth century was derived naturally and regularly from that of the twelfth; it resulted from the application of the same principles to the requirements of a different age, and was in fact the same style under different circumstances. Let us proceed in the same way, and there is no reason to doubt that a style will be developed, suitable in every way to modern society, differing, perhaps, from twelfth or fifteenth century Gothic as much as those styles did from each other, but still thoroughly Gothic, and the lawful offspring of that system of art which is coeval with modern civilization, and which kept pace with it in every advance it made from the tenth to the sixteenth century.

"Such, however, is not the procedure of those modern architects of whom we are now speaking [the revivalists]. They cling to the exclusive use of such architectural forms as are to be found in old Gothic work (and it may be added, to the old materials); and when a novel requirement forces itself upon their attention they either suppress it or else coax it into apparent consistency with precedent. . . . . The times do now call on us 'to meet such requirements,' and how is the demand met? By absolute indifference."

Again (p. 14):

"Their only thought was to modify the existing art of their day to suit the novelties and keep pace with the growth of an advancing civilization."

And again (p. 59):

"The new style will not be attained by any violent and sudden alteration of the old one, but by a gradual and insensible growth. The adopted art does not fit; it galls here and chafes there; and those instinctive half-unconscious movements by which relief is sought, and those minor alterations by which it is gained, though trifling in themselves, in the end give to the style a form differing

more or less widely from the old one, though, in the main, it will continue the same style still. In each particular where inconvenience is felt, the successful effort to remove it forms, in fact, one step onward to the end. Perhaps it is only that some old tool is changed for a new one; or that old difficulties are met by modern discoveries which give a straightforward and simple way to do a thing that could heretofore be reached only by a roundabout and complex one, and so old modes of construction yield to new, as, for instance, when we use straight iron girders instead of piers and arches; perhaps some material is brought into more general use by a cheaper and better way of working it; or the increase of commerce brings materials to hand which were before almost or quite unattainable."

Again (p. 109):

"It is evident that the changes by which Gothic is to be developed into a living art will consist, first, in the gradual removal of archaicisms which clash with modern habits; and, secondly, by the incorporation into it of modern ideas, and the utilization of modern discoveries and improvements. We must therefore be prepared to quit old example exactly at those points where the ways of modern and ancient society diverge, especially when the new paths take higher and more commanding ground than the old."

Sir G. G. Scott evidently anticipated its adoption by his school, and in his work on "Secular and Domestic Architecture," already referred to, says:[1]

"The subject of metal construction seems likely to assume great importance in the hands of those engaged in the Gothic revival. . . . .

"There can be no doubt that the iron roof is susceptible of exquisite beauty, and is peculiarly adapted to treatment suited to our style; and I would strongly urge attention to this subject. It is not, perhaps, suitable to every class of building, but to many more, probably, than it has yet been applied to; and certainly is capable of infinitely greater beauty than it has yet attained. Metallic construction is the great development of our age, and it

[1] Chap. v., pp. 112, 113.

speaks ill for the taste of our architects that they have done so little to render it beautiful."[1]

The oxidation of iron is its weak point, undoubtedly, and has proved detrimental to it. Oxidation is a difficulty, but this has not prevented its use in engineering works,—why should it in architecture? We must content ourselves for the present with the means we have at our disposal of preventing oxidation;[2] possibly the time is not far distant when we shall have at our disposal a new metal, which is daily coming more and more to the front—aluminium. With this eventuality in view the following extracts may prove interesting:

"With pure aluminium the resistance of the metal to direct oxidation is so considerable that at the melting point of platinum it is hardly appreciably touched, and does not lose its lustre. It is well known that the mere oxidizable metals take this property away from it. But silicon itself, which is much less oxidizable, when alloyed with it makes it burn with great brilliancy, because there is formed a silicate of aluminium. While the above observations are in the main true, yet it is now well known that objects made of commercial aluminium do after a long exposure become coated with a very thin film, which gives the surface a 'dead' appearance. The coating is very similar in appearance to that forming on zinc under the same circumstances. The oxidation, however, does not continue, for the film seems to be absolutely continuous and to protect the metal underneath from further oxidation. This coating can best be removed by very dilute acid, after which the surface can be burnished to its former brilliancy."[3]

"We have then a semi-noble metal; but, while silver, gold, and platinum have extremely small prospect of becoming noticeably cheaper, yet the time is probably not far distant when we shall

[1] Sir G. G. Scott used it, but scrupulously concealed, in the canopy of the Prince Consort Memorial.

[2] It is currently believed that the iron roofing covering the Houses of Parliament is protected, and is reported to have stood the action of time very well.

[3] "Aluminium," by J. W. Richards, M.A., etc., 1890, pp. 71, 72.

have our semi-noble metal at the price of the base ones. This affords the immense future for aluminium."

"But when its price is down to that of these baser metals it will begin to replace them by virtue of its other superior qualities, chemical and physical; aside from its lightness, it will win a large field simply in comparison with them on its merits as a metal. Thus, there are wide applications now almost unthought of, because the high price has been a blank wall to stop its use, but as it cheapens more and more we hear every day of new uses brought to light. Thus its sphere will widen until, since its ores are as cheap as those of iron, it will approximate in utility to that universal metal."[1]

The following extracts from an article on "Aluminium in Ship-building," which appeared in the "Morning Post," of January 19th, 1894, bear upon the subject generally:

"Similarly to electricity, the metal aluminium can claim to have passed the bounds of purely abstract science, and is no longer regarded in the light of a novelty or a curiosity. Its production is no longer limited to the small metallic 'button,' for the ton can now be obtained at a cost, and with a facility, formerly denied to the ounce. . . . .

"The quantity [of aluminium] at our command is practically inexhaustible—a very important factor in all calculations in connection with its use. The quantity available for consumption is, therefore, clearly limited solely by the cost of its extraction, which the aid of electricity has already reduced to reasonable limits, and will, no doubt, reduce still further. As a proof that a large demand, especially in the instance before us, is attended, after a brief delay, with a decreased cost of production, we may appropriately cite the case of the employment of steel in the place of wrought-iron. A quarter of a century ago steel was nearly four times the price it is now, and at present steel rails and other rolled sections can be purchased in the market at as cheap a rate as if they were made of wrought-iron. . . . .

"A cubic foot of pure aluminium weighs 166 lbs., and a cubic foot of steel 499 lbs., or in the proportion of three to one. Its lightness, durability, and comparative insensibility to atmospherical

[1] "Aluminium," by J. W. Richards, M.A., etc., 1890, pp. 367, 368.

and other deteriorating influences all tend to render this metal most useful in all cases in which these considerations are paramount. . . . .

"There can be no doubt that the new metal is coming strongly to the front as a material for building the particular class of ships to which we have directed attention. As one instance we may quote our contemporary the 'Moniteur de la Flotte,' which, in a recent number, states that 'the Ministère de la Marine has given an order to the well-known firm of Messrs. Yarrow for a boat built of aluminium to be attached to the torpedo-boat "La Foudre."' A great drawback to the more extended employment of aluminium is the small range of elasticity possessed by the metal. . . . . There is another item to be taken into account, and one which, unfortunately, militates, to some extent, against the progress of the new metal, and that is the question of comparative cost. This cannot be altogether overlooked, and, as an example, we may take, from the same authority, that the small yacht 'Vendenesse,' of fifteen tons, built of aluminium alloy, and launched a few days ago on the Loire. This little craft cost £2,200, whereas it was estimated that one of similar dimensions could have been built of steel for £1,500. It may, however, be safely predicted that this disadvantage under which aluminium labours in comparison with its rivals will be of only a temporary character. Directly aluminium takes its place among the ranks of acknowledged constructive materials, and especially in ship-building, the cost of its production will sensibly diminish. Independently of its numerous other applications, both useful and ornamental, it is now fairly launched in the field of naval construction, exposed to searching trials, crucial experiments and tests, and it would, after all, be no marvel if it should come unscathed out of the ordeal, and ultimately become another substitute for the wooden walls of old England."

From a circular recently sent out by a well-known London firm we learn that:

"Several petroleum yachts, a Swedish lifeboat, and a steamer now plying on the Swiss Lakes have been built of it, and that a house of sixteen stories has also been built at Chicago of this metal externally."

In fact, it is well known that the question of supplying

the rapidly increasing demand for aluminium is now so engrossing the minds of many scientific men, that large sums of money are being expended both at home and abroad in attempting its solution, so ardently is it believed that this metal—so recently discovered, and possessing, as it does, such splendid and exceptional qualities, and charged with so many beneficent possibilities—is destined to become the constructive metal of the future. Every day proves the truth of this assertion. The "Morning Post," of March 26th, 1894, in a description of the "American North Pole Expedition" then about to start, as fitted out by Mr. Walter Wellman, shows what a great advantage its application will give him over his predecessors. Mr. Wellman, the leader of the expedition, at an interview with a representative of Reuter's agency, stated that:

"An important feature of our expedition is the use we are making of that metal of the future, aluminium, in the construction of the boats and sledges. By this means we get great strength with extreme lightness. The Delong and Melville party in their memorable escape from the ice-pack to the north of Siberia in 1881, carried boats weighing, when empty, from 2,500 lbs. to 3,500 lbs. each; and Sir E. Parry, in his famous attempt to reach the Pole from the north of Spitzbergen in 1827, carried boats weighing 1,700 lbs., while we have boats of approximately the same capacity and of even greater strength weighing from 350 lbs. to 400 lbs. each. It is impossible to puncture the sides of these boats with repeated blows from a hammer. We have used aluminium with tensile strength of 54,000 lbs. to the square inch, equal to the very best iron and only about one-third its weight. In our sledges, too, which are of aluminium, we have a new departure in Arctic work. They are of what is known as the Hudson Bay type, with flat, smooth bottoms. They are merely sheets of properly strengthened aluminium, weighing about 26 lbs., with a carrying capacity of 1,000 lbs. if necessary."

On January 11th, 1894, application was made to the Court of Chancery by the Aluminium Company, on peti-

tion, for reduction of capital, when it was pleaded that the proposed reduction became necessary because what originally cost 60*s.* a pound to produce could now be produced at a much less cost. The court made the order as asked for.

The points of special interest in the above are the unlimited supply, and its non-corrosiveness, except as to the thin film referred to, which, so far from being objectionable as a building material, would really be an advantage, as the toning down of the exposed surfaces would considerably improve its appearance.

It is not at all necessary to consider an iron constructed building as iron throughout, which view Professor Kerr seems to take of it in his editorial remarks (Fergusson). He admits that "a skeleton of ironwork filled in with glass" might be artistic, but transparent glass is only used as a filling for purposes of light; any other filling is quite as legitimate. We submit that it is no more necessary to construct the filling in of iron, than, in a wooden house, to fill in between the construction with wood. The term "half timbered," we take it, is simply descriptive, and whether the filling be brick panelling, stone, or concrete slabs, or lath and cement, or terra-cotta in all its varied treatments, the construction is still a timber construction. The illustration shown by Professor Kerr of an iron front in New York, and which he considers "characteristically designed," seems more like an extremely poor travesty of a very ordinary stone street front. The Professor says :— "We need not grudge him [the architect] the Corinthian capitals of his shafts, or the mediæval canopy which constitutes his main cornice"—the enumeration of which features needs no comment. It is quite clear that this is entirely wrong. But it so happens that on the previous page he gives an example of a wooden house from the States, "Glenchalet" by name, which possesses in a marked

degree many of the features suitable to iron construction, and if, in this building, iron had been substituted for wood, we should have considered that the Americans had made a considerable advance towards a solution of the problem.[1]

The main objection to metal arises, perhaps, from the fact that it is without *historical associations;* our cathedrals and parish churches are not built of it, and it was not even used in bridges till modern times,[2] it savours too much of the top hat and frock coat, and not enough of the be-feathered cap and slashed doublet. In short, there is *no precedent* for it. The Gothicist does not

[1] In the notice of the constructional ironwork at the Chicago Exhibition, which appeared in "The Builder," October 14th, 1893, we are told, speaking of the exhibit of an American firm, that "their speciality is the production of a metal roofing that will similate clay tiles in appearance." Another American firm are introducing "metallic fronts" into this country, and announce that they present when erected "all the appearance of a solid stone building; they are more quickly set up, require little or no soldering, and go at a lower freight rate than any metallic front made." They appear to use copper, sheet-iron or zinc, thin and stamped to represent the jointing of, and in imitation of, the various stone dressed faces, and are termed "block faced," "picked faced," "hand hammered," etc., as well as "chipped brick," and any other surfaces. Evidently these firms hold loose views of the principles of art. It is such vagaries as these which raise doubts whether, after all, much is to be expected of America in this matter. "It is a comfort," says "The Builder" of March 24th, 1894, remarking on the exhibit of the same firm at the Agricultural Hall, "that no English manufacturer has perpetrated this."

[2] Bridges have followed the same course as houses in regard to the materials used for their construction, viz., first, in point of time, timber; next, stone and brick; and, lastly, when iron became available, that was the material applied, first as *cast*, supplanted by wrought when its great superiority became an acknowledged fact. On this subject Mr. E. M. Barry remarks:—"Now that science would appear to have adopted iron or steel as the bridge-building material of the time, it is probable that the days of stone bridge-building are over, and that an engineer, if entrusted now with the erection of another new London Bridge, would propose an iron structure. However much we may regret such a conclusion, it appears to be inevitable, as the primary purpose of a bridge is utility" ("Lectures on Architecture," p. 63).

believe that the Goths would have used it, and he has as good a right to his belief as his opponent has for believing that they would had they had the opportunity of doing so. M. Viollet-le-Duc, in his "Lectures on Architecture,"[1] says :

"Moreover, these [Gothic] architects were daring; their structural combinations exceeded the limits of the material appliances at their disposal; they anticipated the industrial progress of their age, appliances failed them rather than theoretical knowledge and imagination. If an architect of the thirteenth century could return among us to-day he would be astonished at our industrial resources, but he might perhaps think that we scarcely know how to make use of them; if material appliances fell short at that time, when art was capable of taking advantage of a great advance in industrial development, our professed respect for 'sound doctrines' (which, however, no one takes the trouble to examine) forbids us the use of those appliances which exist in abundance in the nineteenth century."

And again :

"If we examine the Roman buildings, which are in masonry, we see that the largest of them do not present interior spaces of very considerable dimensions. . . . .

"If the use of iron in building does not enable us to exceed these dimensions at a decidedly less cost, then indeed we are inferior to our ancestors. In fact the great builders of the middle ages, like those of the Renaissance, were evidently men of subtle, active, and inventive intellect. I say inventive intellect, for that is the ruling characteristic of the works bequeathed to us by those old builders. It is apparent in the structure of our mediæval buildings, and only ceases to manifest itself when the material becomes inadequate. It is apparent in the attempts of the Renaissance; for, apart from the superficial imitation of Classic forms which the architects of the latter period affected, they did not adhere to this imitation in the construction of their buildings and in the methods they employed. Without reference to the buildings of that epoch, we may find the proof of this fact in the written works of several of those architects, such as Albert Dürer, Serlio,

[1] Vol. i., Lecture VII., p. 282.

Philibert de l'Orme, etc. On every page of their writings we find some original idea or new adaptation; and, as in the case of their predecessors, their ingenuity is circumscribed only by the inadequacy of their materials. Have we in the present day reached, or even endeavoured to reach, such a limit? We think not."[1]

The mediæval builders did not know iron as a constructive material; and if they had known it they had no means of procuring it in anything like sufficient quantities. We have it, and can produce it in any quantity. We are living in an age of iron—"The real iron age," as Mr. Burges once spoke of it.

M. Viollet-le-Duc mentions one reason for the use of iron which is worthy of attention. He says:[2]

"Iron mines are inexhaustible, at any rate they will furnish the human race with materials as long as, in all probability, it will exist on the planet. Besides, while the destruction of forests ruins a country, the manufacture of iron enriches it, for it requires an industrial development and an amount of labour which is the equivalent of wealth. When a tree is cut down there is an absolute loss, for it will probably never be replaced by a similar one. But the manufacture of a bar of iron has caused no loss to the soil, and has no value except in virtue of the labour which its production has necessitated. What it is sold for is the product of labour paid for, that is to say, it represents a portion of the wealth of the country. The more such bars are demanded, the more the prosperity of the country which supplies them is increased. The more timber is cut down in a forest the greater risk we run of destroying a species of wealth which we should not expend except in cases of absolute necessity; for it is not in the power of man to restore it. In whichever way we consider it, the use of iron in buildings is henceforth obligatory. It is dictated by the necessity, more and more imperative, of preserving our oak, and by considerations of real economy, if we thoroughly study the advantages of iron in point of hardness, durability, and incombustibility."

The Gothicist wonders what iron construction would

[1] Vol. ii., § 12, p. 86.
[2] Vol. ii., Lecture XVIII., p. 334.

have been like in the thirteenth century, and so, for the matter of that, does everybody else; but, except as an antiquarian study, it does not concern us. When Mr. Burges asked, "How would they [the mediævalists] have treated a steamboat? Would the funnel have been made into a sort of tower? Would the sails have been painted with coat armour? Would shields have been hung all round, and would the paddle-boxes have been historiated with subjects on a gold ground?"[1] he was unmistakably hinting to us how *he* would have treated a steamboat had he one to build, believing that in the thirteenth century a steamboat builder would probably have done something like it; but what concerns us, and what we have to discover, is not *that*, but how the old boat-builders would have treated it could their lives have been prolonged to the present century; because, could this be ascertained—assuming that they would be guided by the same principles of common sense which characterized the greater part of their work in the thirteenth century—we should know what to do. Probably in the thirteenth century they *would* have hung "shields all round," because shields were very much in use at that time; but it must not for a moment be supposed they would do so now, when they are no longer in vogue. But did these old builders give any hints which would serve as beacons to us? They did. In the first place, there was the fearless use of wood, structurally, in a rational manner; there was no attempt to make it "Gothic" by an imitative stone treatment; they were totally indifferent as to the ultimate forms evolved by the use of this material, perfectly content to work on until the style was developed, when, perhaps to their surprise, it turned out to be as Gothic as their stone structures. The question is often asked, "What would mediæval builders have done under certain circumstances?"

[1] W. Burges, "Art Applied to Industry," p. 52.

or, to invert the question, "What should we have done with a timber construction had we lived in the middle ages?" The reply is not far to seek. We should probably have built walls three feet thick instead of ten inches, with, perhaps, huge buttresses built up with inch ploughed and tongued boarding on a proper backing, and should never have dreamed of doing anything so un-Gothic and ridiculous as to make one story overhang another. Or a reply may be given in another form. In the "Ecclesiastica Instrumenta," second series, edited by the Ecclesiological (late Camden) Society, is a set of drawings for an iron church, which is referred to by Sir G. G. Scott, in his "Secular and Domestic Architecture,"[1] in the following eulogistic terms:

"A beautiful design for a church entirely of iron has recently been published by the Ecclesiological Society, showing that quite a new version of the beauties of a Gothic interior might be obtained by the use of wrought-iron for its entire construction. Mr. Skidmore, so well known for his skill in iron and brass-work, as well as in the use of the precious metals, has since written to that Society a very interesting letter, pressing the use of iron largely as a matter, not of economy, but of principle—as being pre-eminently the material of our own day—and urges, on that ground, that we should be more thoroughly acting up to the spirit of the builders of the middle ages by its adoption, than by limiting ourselves to timber and stone."

The Committee of the Society preface these plates with the following remarks:

"The problem to be solved is, how to employ iron for an ecclesiastical building in accordance with the qualities and conditions of the material. It may be safely asserted that the iron churches, of which several have been sent out to the colonies, or erected as temporary churches at home, have not fulfilled these conditions. In fact their construction is merely a *wooden* one.

[1] Chap. v., p. 112.

Their framework is of wood, covered externally with corrugated iron, the pillars are wooden posts, and the roofs both of nave and aisles are wooden in their construction. What is such a building but a wooden structure encased in metallic plates?

"On the other hand, the iron structures so familiar to our eyes in railway sheds are altogether unecclesiastical in character and associations, and, like the Crystal Palace, fall within the province of engineering rather than architecture. But undoubtedly they show a legitimate use of the material, and develop, according to sound principles, its special properties and characteristics.

"The present design is an attempt to show how a church-like building may be constructed in iron, without, on the one hand, abandoning architectural forms, or, on the other, violating the essential laws which ought to regulate the employment of this, or indeed of any, material. Our drawings show that the framework of this design is of iron. The columns, instead of being cast imitations of stone forms, are composed of four detached rods, bound together by a spiral band; an arrangement not only remarkable for grace and lightness, but obviously allowing of any amount of characteristic ornamentation. The external walls are a framework of cast-iron, so arranged as to have the interstices faced internally and externally with corrugated plates, and packed between these plates with felt and sand. The arches (lateral and transverse), the framework of the roofs, and the girders of the aisles are formed of iron-castings riveted together. . . . . It is only necessary to add, that as far as possible the same forms have been preserved, so as to reduce the number of castings. . . . . The doubling of the clustered piers to form a chancel-arch will be noticed. This feature could be, of course, omitted in cases where poverty would forbid any unnecessary enrichment."[1]

The drawings, coming from such a source, should be unimpeachable, but the walls are twelve inches thick, and consequently the plan appears different from that of a church with stone walls, as, of course, it should do. This is promising. It seems as if its designer had dispensed with the thirteenth and fourteenth century tradition for the

[1] "Instrumenta Ecclesiastica" (second series), Plates LXVII to LXXII.

nonce, and was not afraid of following the lead of his material, though the path was untrodden and dark; but we are soon undeceived, for on turning to the next plate, which is the "Longitudinal Section," what do we find? *Horresco referens!* A stone building travestied in almost every particular. Nave piers and arches; arcaded triforium and ditto clerestory; chancel arch with a two feet six inches intrados obtained by using double piers; parclose, arched windows and doorway and roof trusses, all following as nearly as possible the orthodox forms of stone or wood. The one exception is that the walls are lined with horizontal widths of corrugated sheet-iron!

The "Transverse Section" shows flying buttresses concealed under the aisle roofs with an iron arcaded enclosure to the vestry, and the same geometric windows. No fault can be found with the rood and the beam carrying it. It is singular, however, that a beam should have been used here, but presumably this was done because it was right and proper as a rood-beam; and this possibly is the most, if not the only, characteristic instance of iron treatment in the whole building. Such a treatment would have been infinitely superior to the arches adopted throughout.

Externally the walls show absolutely no construction, but form one dreary expanse of corrugated iron from (iron) plinth to roof, unbroken save by the windows, one of which is a rose, "formed of a sheet of thin iron, pierced and inserted in a cast circumference."

It is doubtful how far it is legitimate as to columns to use them in iron construction. The ideal support seems to be of a webbed section in the form of a Greek cross.

Besides æsthetic reasons there are some of a practical nature, such as the following:

"The hollow column is theoretically the strongest form of section, but probability of an unequal thickness of metal is an

objection to its use ; this may be guarded against, to a certain extent, by specifying that some of the columns shall have small holes drilled in their shafts to ascertain the thickness, and that, where the metal on opposite sides differs more than one-fifth of the proper thickness, such columns shall be broken up. To show that great variation in thickness is not an imaginary danger, I may mention that, on one occasion, while inspecting a number of columns, and while waiting for a hammer to be brought for the purpose of sounding them, I idly prodded one of the shafts with my umbrella, when, to my intense surprise, at the third prod the point of the umbrella penetrated the shaft of the column. Of course it was at once broken up, and it was found that, instead of being of the proper uniform thickness of $1\frac{1}{8}$, it was nearly 2 inches thick on one side, and about the thickness of a sheet of paper at the part where I so luckily prodded it. Another objection to the form of the hollow column is that it does not lend itself very readily to being cased in a fire-proof material." [1]

The following letter shows that Mr. Skidmore had a truer conception of the legitimate use and proper treatment of iron than could have been obtained by a study of these drawings :

"To the Committee of the Ecclesiological Society (Iron Church.)

"Coventry, March 10th, 1856.

"Gentlemen,—I forward by this post estimates for the iron church as proposed in the enclosed plans, and at the same time wish to beg the committee's consideration to the fact, that if iron is to be considered a material of our age and locality, and to be used as our forefathers used every material of their day, giving it its natural expression, adding art and beauty to the constructive form, it would be unlike their actions, and unworthy of ourselves, to use a new (for considering the facility of its production in this day, and its great and extending use, it may fairly be ranked as a new) material, only as a cheap expedient, instead of giving to it that development in Christian art of which it is so capable. In

[1] "The Application of Iron and Steel to Building Purposes," F. J. Reade, "The Transactions of the Royal Institute of British Architects," vol. vi., New Series, p. 18.

furtherance of these views, I would suggest the use of geometrical forms of iron (the constructive supports of the walls) filled in with marble of various colours: as also carving or ceramic art for the same purpose. The interior would afford ample scope for carrying out that floral treatment so much used in the fourteenth century. The iron also would require coating with pigments to preserve its surface, and would form a ready means of illumination; the renewed use of crystals and gems, as in ancient metal work; the use of enamels, which present facilities would permit to a greater extent even than in ancient work; the covering wall surfaces with tapestry, having historical subjects: reredos of brass, or silver and brass combined,—are also objects to be aimed at.

"The completion of some such work as this, of greater or less extent, would serve to inaugurate the use of metal combining the artistic skill and manipulated powers of our day. Believe me, Gentlemen, etc.,

"F. A. Skidmore."

This structure has been considered at some length, because it went forth with the sanction of a learned society. It met with the approval of one of our most famous Gothic architects, and yet there is hardly anything in it but *what should* be avoided in any artistic treatment of iron, based upon a rational construction.

But perhaps it is not fair to take this iron church as showing the best that could be done even at that time; for there were those who held more advanced views, as is evident from the foregoing reference made by Sir G. G. Scott, Mr. Skidmore's letter, and the following extracts from "The Ecclesiologist:" [1]

"Seeing then that the *increased* production in iron has actually placed it in the rank of *a new material* of our day, we should enquire into its constructive powers, examples of which are multiplying around us. To say that it is not equal to wood and stone, and to treat it as a secondary help, a material only fitted for screens, vanes, etc., is to ignore the fact that it *has* been used where the adoption of *wood or stone* would be either *impossible*, or

[1] Vol. xvii., p. 335.

the cost of erection such as to render it impracticable. For instance, the roof of the railway station at Birmingham covers over an area of 216 feet from pier to pier, while our cathedrals average about forty! What roof of wood or stone could be constructed to span the naves of five cathedrals in one?"

Mr. Skidmore remarks:[1]

"I have heard an objection urged against iron for churches, that it must be thin in its general appearance: this is not a necessary condition. It is essential, in construction, that a wall should be double, giving security against atmospheric changes, and, at the same time, imparting solidity.[2] Again, there are various modes by which the interstices of the frameworks may be filled externally and internally—with ceramic art, with marbles, or stone carvings, or all three united—the arrangement of colours and combination of geometrical forms giving ample opportunities to the skill of the architect. It is in the union of the powers of the past and the present, and so availing ourselves of all the arts and materials of our day, that we may hope to accomplish great ends."

And in vol. xvii. of "The Ecclesiologist" there is a notice of certain papers sent to the society by Mr. Vose Pickett on "Iron Construction," having reference to this church, and although "The Ecclesiologist," evidently in love with its own bantling, disapproves of Mr. Pickett's views, it very courteously gives some extracts from the papers, and, judging from these, his views were well in advance of his time. He says:

"This design of Mr. Slater's totally fails to accord with the qualities and conditions of the material, which are, compared with the ancient materials, those of unrivalled power for realizing,

[1] "The Ecclesiologist," vol. xvii., p. 338.

[2] With reference to the heat-retaining qualities of stone, brick, and a thin hollow wall, formed of one and a half inch weather-boards and half inch matched boarding, filled in with crushed chalk or lime six inches thick, a brick wall is four times warmer than one built of ordinary building stone, and the thin wall, as above, would be as warm as a brick wall three feet thick.

in peculiar fitness and beauty, the most striking and beneficial inventions of the human mind. Such examples as this would actually forbid any engineering invention of any consequence. Iron and analogous materials are here completely in fetters. As observed by the Rev. W. Scott in the discussion, Mr. Slater's is a stone church built in iron, and not one composed on purely metallic principles.

"If such is the case, this slavish condemnation of the not only unrivalled, but totally opposite, powers of the new materials to do the drudgery of Gothic stonework is the greatest perversion of the true philosophy of not only ancient but modern art.

"Again. It is stated that, 'It may be safely asserted that the iron churches, of which several have been sent out to the colonies, or erected as temporary churches at home, have not fulfilled these conditions. In fact, their construction is merely a wooden one. Their framework is of wood, covered externally with corrugated iron. The pillars are wooden posts, and the roofs, both of nave and aisles, are wooden in their construction. What is such a building but a wooden structure encased in metallic plates?'

"And what is such a structure as the design in the 'Instrumenta' (allowing for, if we *could throw aside its fundamentals*, some portions of natural beauty, the more dangerous because such ever serve to hide the falseness of its philosophy,) but the degradation of the powers of a material to purposes it both never originated, and which are totally unworthy of it? And which class of materials demand *an architectural* art *of their own*, and now, and have long possessed one, and of a liberty adequate to develop the hitherto unmanifested powers of new primary materials: in fact, a modern truth, which is illustrated, and *in contradistinction* to the *ancient truth.*

"Regarding the design in the 'Instrumenta' by this conformity to Gothic forms and arrangements, there could scarcely be in the whole range of construction anything so repulsive as the exterior of this church. Its frightful sides were too bad to be shown. If grandeur, or even decency, be considered appropriate in the exterior of the house of God, this example outrages such feelings to the last degree.

"Is invention so poor that it is necessary, as is here shown, to copy some of the iron details of the brick and mortar and iron Great Western Railway Station? What artistic mind would select

corrugated iron for an appropriate and enduring wall construction for a new architecture?"[1]

This is the second reply, and it is but a fair inference that as we treated metal in this church so should we have dealt with the kindred problem of "building in wood;" and, most probably, with the like humiliating result.

In connection with this, it is noticeable that in the designs for a "Wooden Church" illustrated in the same volume, where the material is rationally treated (there was precedent for *that*), there is the usual dissimilarity between it and a stone structure.

The half-timbered gate-house at Stokesay Castle is as Gothic as any other part of the castle, but very dissimilar (see Plate V., page 35, *ante*). Were one of the most frequently quoted axioms of the revivalists—that every material has its own distinctive treatment—acted upon in building an iron constructed house, the result would be a Gothic house, unlike one built of stone, but in many respects not very dissimilar to one built of wood, and why? Because the distinctive capabilities of these two materials are somewhat similar. It is not probable that all the resultant forms would be similar, but they would naturally be so; they must work themselves out. Mr. E. M. Barry says:[2]

"An important point in our civic architecture is the selection of materials, as bearing on both the artistic and the utilitarian side of our art. We have most of us admired the timber houses so much in favour with mediæval architects, and some are doubtless found to regret their disuse, and to declaim against any prohibition of such a manner of construction in our modern towns. A careful study of old timber houses will show us that their beauty depends on the sensible application of true principles of construction and decoration, designed with a careful recognition of the

[1] Vol. xvii., pp. 280, 281.

[2] "Lectures on Architecture," p. 169.

essential characteristics of the material employed. The forms of all corbels, windows, and roofs are such as are suitable for wooden constructions, and for no other. . . .

"In modern architecture wood bears a more subordinate place, and in so treating it we do but follow the same principles of common sense which guided our forefathers. They built chiefly in wood, because they had practically no choice but to do so. We have materials of all kinds brought to our doors, and, if we attempted to employ wooden construction, as they did, the material would soon reach a famine price, and ultimately fail us. Thus, while we may not copy their practice, we may well be guided by their principles, and may study in a similar spirit the qualities of the materials we employ, with a view to that rational application of ornament which has ever distinguished good art from bad."

Mr. Freeman, in his "History of Architecture,"[1] says on this point:

"These forms and associations naturally remain stamped upon the mind of the art till some great mechanical discovery; some mighty revolution in politics or religion; some complete revulsion in taste and feeling, brings its influence, whether sudden or gradual, whether by violent change or slow development, to bear alike on outline and detail. Hence arise transitional styles; periods of progress from one principle to another, which will, in most cases, be found to consist in an attempt to engraft a new principle of construction on an old principle of decoration. The building enjoys the mechanical advantages of the new discovery, whilst the forms of the ornamental detail remain as before, until the new constructive principle has worked out for itself a more harmonious system of decoration."

Mr. Freeman does not think that this holds good with regard to the Renaissance, for the simple reason that it had no principles of any kind to impart.[2] Yet it would

[1] P. 16.

[2] Mr. Morris says:—"For the Romans had no ornamental building of their own (perhaps we should say, no art of their own), and there-

seem to be applicable to a new development of Gothic on the lines of a metallic construction, for should a new development take place, it will in all probability be due to the use of a new material, and consequently, to new methods of construction; and as this new material would probably be for some time purely constructive (except so far as it is already used in a wrought form for purposes of decoration, etc.), the decorative forms of the architecture would be those known to us, until "the new constructive principle had worked out for itself a more harmonious system of decoration." First the body, then the soul to inhabit it; the body, being a mechanical structure, can be reasoned about and contrived; but the soul must come, we know not whence, come it always has and will, adapted to, because growing out of the requirements of the structure. If this view be correct, it explains the reason why no *invention* of a new style is possible. We can invent a new construction and the new style will grow out of it. We can seize suggestions, for art purposes, as they occur; all else is beyond our power.

Mr. E. M. Barry says:[1]

"All true artists are, indeed, original, in a certain sense; but a new and original style of architecture has never yet been invented. We can read the history of our art backwards, until all traces of origin are lost in the mists of a dim antiquity, passing through Rome and Greece to Etruria and Asia Minor, and thence to the almost mythical annals of Egypt and Assyria. In such investigations the origin of forms which became gradually developed and dominant, may be traced in the works of different tribes and races, leading

fore fitted their ideas of the ideas of the Greek sculptor-architect on to their own massive buildings; and as the Greek plastered his energetic and capable civilized sculpture on to the magnified shrine of his forefathers, so the Roman plastered sculpture, shrine, and all, on to his magnificent engineer's work" ("Gothic Architecture," p. 59).

[1] "Lectures on Architecture," p. 146.

up to, and culminating in, the perfection which is only to be achieved by persistent effort."

In a charming little book recently published—"An Architect in Exile," by Mr. Bernard Whelan—the author says (p. 16):

"This has been a century of revivals and of new departures. The latter have been the outcome of science; the former have sprung from the inalienable love of beauty and of truth."

And is not this the explanation, first the body built by science, then the art growing out of it, and so the "departure" is "the outcome of science;" but the "revivals" have been caused by "love of beauty and of truth." There was already a body for the revivalists, and not only a body but also the evolved art ready to hand. But the "departure" is nobler than the "revival" by just so much as the work of the master is superior to that of the student, and is more worthy of and receives a higher homage.[1]

And further (p. 73) he adds:

"The arts are only different methods of expression; their mother-idea is, in its essence, the same, though the children thereof may be poems or paintings, melodies or architecture . . . The genius of expression has made all time the present time, and all nations one nation."

M. Viollet-le-Duc, in "Lectures on Architecture," says:

"I cannot too frequently repeat it: Art is unique. Its essential characteristic is the harmony it presents with national manners, institutions, and genius. If it assumes different forms, it is because this genius, those manners and institutions vary; if, in the course of time, it seems to return to the point whence it set out, it is because an analogous phenomenon presents itself in the national institutions, manners, and genius. If it has missed its way, and is seeking it in every direction, do not let us call out to

[1] The possible function of the Gothic revival has been already referred to (p. 51), but, even so, the superstructure is superior to the foundation.

it, 'This is the only right course—that which I have chosen.' Let us content ourselves with illuminating its path, and diffusing light over the whole field; let us aid it by attentive study, by earnest and faithful analysis; but let us not impel it to the right or to the left, under the pretence of conducting it in the true path." [1]

"Forms, fortunately for us, are not invented: they grow, if we will only permit them to do so—provided we cultivate and irrigate the soil. The forms of the future must be the modified forms of the past, the modifications being due to construction and material, and progress in understanding both. Modifications of this kind in art are of comparatively slow growth, like that of natural organisms as determined by environment. But we are living in an exceptional age, when considered in the interest of architectural art. Centuries have been permitted to pass without the architect giving any heed to the progress of ideas, to the acts illustrating them, to the resulting emotions, or to the progress of the science of construction and its relation to art. A prompt and intelligent recognition of the environment of architectural forms may lead to vast and rapid strides in their modification; so rapid, indeed, that to the superficial observer that modification will seem absolute change." [2]

"Architectural forms, like musical compositions, contain but few elements, but these are capable of a great number of combinations. Nor is it necessary that these combinations should be laboriously sought for; they arise naturally out of the conditions of the structure, out of the idea which has given rise to it; and out of the material used in its construction. They are of value only in expressing all these conditions, and of no art value whatever if brought about in any other way. The modern architect but rarely refers an architectural composition to the idea which has given rise to it. He often ignores or neglects the construction and the possibilities of the material employed, as technical matters beneath his notice, but imagines that after a structure has been technically designed, so far as it is necessary to answer its practical purposes, either by some engineer or by himself, *then* the labour of the architect begins by enclosing the structure on the outside and lining it on the inside with a skin of architectural

[1] Vol. i., Lecture III., p. 97.

[2] Leopold Eidlitz, "The Nature and Functions of Art," etc., p. 399.

forms gathered from his general fund, in accordance with the dictates of his taste." [1]

"But it must be clear that man cannot invent artistic forms, but that he may permit himself to be led into the development of forms in precisely the same way as Nature develops her forms. In Nature environment compels functions, and the organism fully responds to these functions; hence it is possessed of perfect expression." [2]

"The architectural mind, which is now filled with multitudes of created forms, may well doubt whether new forms are a possibility; but as long as ideas are developed, fitting art forms to express them will be the logical result, provided architecture remains a living art." [3]

Mr. Freeman divides architecture into two great groups, distinguished, the one by the arch, and the other by the lintel; but can this distinction, which has to do altogether with the form be maintained; shall we not find ourselves in a position as unscientific as that in which the Linnæan system of botany landed its adherents? Everybody talks of *principles*, but if we really believe in their prior importance as we profess to do, should not classification be made on them rather than on more visual differences? And, assuming this to be the case, why may not a trabeated style, suited to a metal construction, be as "Gothic" as a pointed arch style? If it cannot be, then the half-timbered erections of the fifteenth century are not Gothic.

Mr. Aitchison says: [4]

"If we use, as we must eventually use, iron and steel for those parts which are to bear great weights, great strains, or to bridge wide spans, and made the ironwork visible, we should not only find that these materials would take new shapes, but must give rise to new ordinances. Iron pycnostyle, systyle, eustyle, and

[1] Leopold Eidlitz, "The Nature and Functions of Art," etc., pp. 42, 43.

[2] *Ibid*, pp. 252, 253.

[3] *Ibid*, p. 261.

[4] "Lecture on Architecture," 1894.

aræstyle would be very different to those of marble columns with marble architraves. Shapeliness in iron must be reached by new proportions, and its enrichments must be different from those in marble on account of the exigencies of the material. Horizontal girders being the most convenient form that iron will take, vaulted ceilings will be superseded by flat ones, and flat roofs will be substituted for high-pitched ones."

In "Secular and Domestic Architecture"[1] Sir G. G. Scott says:

"'But,' I hear an objector ask, 'what will have become of our Gothic building when robbed of its pointed arches, its mullioned windows, and its high roofs? will it not be like "Hamlet" with the character of the Prince of Denmark dispensed with? Surely a building with lintelled openings or round arches, with wide, undivided windows, and with low roofs, can lay little claim to the name of Gothic; and it would be better at once to be satisfied with a style in which such are the essential features, than to adopt anything so effete as Gothic architecture robbed of all its leading characteristics!' No such thing. Even if I were advocating the omission of these characteristics, I believe a better style might be made out of what is left of Gothic architecture than the dull, insipid style of the present day."

Mr. E. M. Barry also remarks:[2]

"The pointed arch was exquisite in proportion and beauty for the simple requirements of ecclesiastical design; but, as the domestic wants of the day increased, a more plastic method of building became a necessity, and this was found in the flat-arched style, which we call Perpendicular or Tudor. There are many examples of the application of this development in house-building; and Crosby Hall in the City is a good specimen, easily accessible to you, of a merchant's town residence. Many farm-houses in various parts of the country still contain remains, more or less perfect, of this style, although the number of them is daily being lessened. For after the dissolution of the religious houses and the appropriation of their property, the splendid palaces of abbots

[1] Chap. iii., pp. 47, 48.
[2] "Lectures on Architecture," pp. 273, 274.

and bishops became manor-houses or private gentlemen's residences; and these have, in numerous cases, degenerated into farm-houses. In them the appearance of fortification was still often kept up, but evidently more from association, or perhaps for ornament, than for use or from necessity. The parapets were battlemented, but the windows were enlarged, the entrance was in the lower floor, and height was attained by the erection of several stories."

And again he says :[1]

"Before quitting the latter [mansion of Aydon] a word may be said about the doorways. The principal entrance, at the top of the flight of steps, is finished with a pointed arch of simple character, with double-splayed jambs. As this entered into a story of considerable altitude, no question would arise as to the height of the arch, but it was otherwise in cases of more moderate dimensions. It is curious to notice how early our ancestors discovered this difficulty in the employment of the pointed arch, and you will observe in one of the doorways the use of a square lintel, with the upper part of the jamb curving inwards—a design which was capable of much greater development. The same square form was also used for window openings when required, and there is an example of this feature in the same building. The thirteenth century architects knew that good architecture should be governed by common sense, and, while clinging to the pointed arch with the utmost affection, they thus early recognized that there were limits to its reasonable application, and that there is a time and place for everything."

We have to ask ourselves how these features became "characteristic." Was it not owing to the material used? Thus, for example, the arched opening was only characteristic of a stone or brick architecture. When wood is selected for the structural material, the arch is not only *not* characteristic of Gothic, but, by the principles which govern that style, its use would be, to a great extent, prohibited. When lead became more generally used for roof coverings,

[1] "Lectures on Architecture," p. 248.

it was found that, for several reasons, it was better to pitch the roofs low; but the low-pitched roof is quite as Gothic as the high-pitched one.

It is singular how, at every turn in our reflections on this fifteenth century style, we are confronted by numerous indications that any further development would be towards a trabeated style. The new materials at our disposal demand it, and this would of itself be a sufficient reason for its introduction; but when one takes into consideration how far this un-arching of Gothic would make for peace, and rid the question of one of its greatest difficulties, one cannot but think that circumstances are propitious.[1]

A kindred reflection is that in the history of architecture we find one principle working with the greatest uniformity, and which cannot have escaped the notice of any who have studied the art, that is, the tendency towards lightness of construction exhibited by every known style—another proof that art is cosmopolitan. As Mr. Fergusson points out in his "Historical Enquiry" (p. 199), the ratio of void to solid parts in the Pyramids is as 1 to 10,000. This reversed gives the ratio where iron is the material used, *i.e.*, 1 part solid to 10,000 parts of void. Is it unreasonable to assume that this invariable rule which has been in abeyance, so far as Gothic architecture is concerned, since the sixteenth century, and still remains in abeyance, would in any future evolution of the art be obeyed intuitively? And if the limit of the use of stone as a constructive material had been reached in the sixteenth century, should we not eagerly seize the opportunity science offers us of following where the principle leads, although to do so entails the sacrifice

[1] It must not be understood that it is intended to ostracize the arch. Let it by all means be used if it can be naturally and truthfully. Decoratively there is no more limit to its use in a metallic than in any other construction.

of time-honoured modes of construction, trusting that if there be any acknowledgment of virtue, this self-sacrifice will eventually meet with its due reward? The following from "The Nature and Functions of Art," etc., although not assigning the same cause, bears testimony to the fact:

"This process of subdividing masses by modelling was undoubtedly carried to excess in late mediæval work. This is evidently owing to an erroneous tendency to attenuate matter for the purpose of giving a sublime spiritual expression to the work, which well accords with the ideas of Christianity of the times, as well as to express function minutely. The times have changed, and with the times our ideas have changed; we do not now look upon matter as the despicable thing it was then held to be."[1]

Mr. E. M. Barry observes:[2]

"In our Norman cathedrals we see an almost Egyptian superfluity, although, from faulty masonry, the strength is not always as great as it seems. Starting from such types, the architects of the middle ages diminished piers, increased the span of arches, and built stone vaults, delighting in the exercise of their constructive skill. Using small stones, they adapted their work to the material, and displayed the utmost ingenuity and power of contrivance. At length the limit of beauty was reached, and architecture ceased to interest, when it became a question of erecting the widest practicable vaults on the thinnest of pillars, and piercing solid walls with the largest possible windows, having the most attenuated mullions."

Supposing that at the touch of some magic wand, one of the buildings to which the above applies could be changed into metal, would the objection made to its lightness still hold good? If so, why? Perhaps the teaching of Mr. Ruskin, in speaking of a paternal government, would apply here, and the extent to which it is possible to carry lightness might be the extent to which it would be right to do so; that is, whatever beauty in the proportions might be

[1] P. 286. [2] "Lectures on Architecture," pp. 68, 69.

possible in metal, would certainly cease to exist when once the factor of safety had been reached, and it is evident that the same limitation necessarily governed the mediæval builders; the question which each period had to decide for itself was, "At what point shall we locate beauty?" The Norman decided in his way, the succeeding builders in theirs, till in the Perpendicular period perhaps the factor of safety was passed, and in some cases even the point of rupture dangerously approached. This with stone as the material, but let metal be substituted, and, like a change of octave, we begin afresh.

Mr. Barry further remarks:

"No one who enters Westminster Abbey gives a thought to the sufficiency of the columns and arches. This he is able to take for granted, by reason of an apparent superabundance of strength; and though such an appearance may sometimes be misleading, doubts would only suggest themselves to a scientific inquirer, or one well acquainted with defects which are apt to lurk in the construction. It is different with some modern works, the offspring of science alone. Here we find light iron roofs and scanty columns, and wonder how long they will stand, and trust they will do so till we are out of reach. Or we are called upon to admire the cleverness of the designer, who has used a less weight of metal than has ever been adopted before. In such cases, stability, in its true architectural sense, is altogether wanting; and when we find ourselves marvelling at the mechanical ingenuity of the work, we may be sure that such ingenuity has banished art."[1]

Whence comes this implicit confidence in the columns at Westminster, and the uneasiness felt at the sight of metal columns, but from our being familiar with the one and somewhat strange to the other? Who fears to trust himself to a metal bridge which would not support its own weight were it possible to build it in stone in a similar manner? It was due to the absence of any such reasoning

[1] "Lectures on Architecture," pp. 80, 81.

as the above that our architecture was not encumbered with such massive proportions as the Normans adopted, as it might have been had no one dared to break through the then established rules.

The following remarks by Mr. W. M. Conway appeared in the "Pall Mall Gazette" (January 20th, 1894):

"Art is not a thing but a manner; does not reply to 'What?' but to 'How?' is not a something done, but the way in which something is done. . . . .

"It follows that the *technique* of any art depends upon the material employed, and if the material is changed the *technique* must also be changed. . . . .

"It might at first thought appear that the question of proportion is a very simple one, which might in all instances be solved by mathematical processes or codified into some readily applicable law. Such, however, is by no means the case; and though to some extent codes and calculations may be employed, as they were employed by the Greeks, who dealt with simple forms, simple purposes, and a simple material, the number of modifying factors, peculiar to each individual case, and that have to be taken into account, make it necessary for the architect to feel his way to the perfect end and by no means merely to reckon to it. This feeling to a result is, by the bye, a quality that distinguishes an artist as such. It is the quality the possession of which by a modern engineer—and no architect-engineer can be great without it—makes of him also an artist and introduces even into machinery the element of art which so many people perceive in it.

"There can be no rigid canon of proportions applicable to all objects and all materials. There is no such canon even for the human form. The trunks of an oak and an aspen, of equal height and perfectly grown, will both be well proportioned, but their proportions will be different; and the reason for this difference arises from the different law of their growth, as expressed in the angle of the spring of the branches, and the different toughness and character of the wood. Thus right proportion is a function of the material, to use a common mathematical expression. . . . .

"When the Egyptians, therefore, changed their building material to stone, though they retained as decorative features the forms derived from wood and mud, they were led, and even forced, to

change their proportions; and such a change of proportions must always accompany any change of building materials. What was obligatory on the architects of Egypt is obligatory on architects to-day. At the beginning of this century stone, brick, and wood were the chief building materials, and such proportions as characterize the buildings of Inigo Jones, Wren, Burlington, or Adams were good. Now we have entered, or are entering, a metal age. Steel, and possibly hereafter aluminium, will more and more enter into and form the chief supporting and binding members of modern buildings. The change involves a revolution in proportions. Old structural features, proper to brick or stone, may be retained and modified into merely decorative adjuncts, but fundamental proportions must be wholly transformed, and this transformation must be the more radical the more extensive is the use of the new material.

"The Eiffel Tower, built wholly of metal, is an example, and a good example, of a step in the direction which architects will be driven to follow in future. The great railway stations, exhibition buildings, and other structures of steel, concrete, paper, and glass, which needs and inventions of our day will call into existence, show which way flows the stream of tendency. The new building material has come to stay. In another century houses may not merely be built with steel girders, they may be made of metal frames bolted together and gripping walls of *papier-maché*."

Mr. Freeman observes: [1]

"We might conceive an arch, whose voussoirs should be wedges, not of stone or its substitute brick, but of wood; practically, however, it is confined to the former, as employing timber in this manner would be a useless expenditure of labour, when an entablature construction offers so much greater facilities for the employment of this material."

This is why the builders in wood of the middle ages did not use an arched construction, and as no one would think of making iron voussoirs, the same result would follow the adoption of metal.

In addition to this treatment of wooden houses, there

[1] "History of Architecture," p. 21.

is a further suggestion—not so practical, perhaps, as the last, but still useful in the general treatment of Perpendicular and Tudor work, in its distinctive characteristics. There is an increasing tendency to lightness of treatment, smaller sections, more slender proportions ;[1] a more general use of more or less pronounced vertical and horizontal lines, as against curved or flowing ones; the decorated arcading of the earlier periods becomes panelling ; traceries are less flowing and more rectangular; arches become flatter, and, in many cases give place to the lintel.

M. Viollet-le-Duc, in " Lectures on Architecture,"[2] says :

" The so complete enumerations " of what has been done before our time, especially by the mediæval architects, are therefore useful if we would advance, and not fall below the works of our predecessors ; for, I say once more, it would seem as if those men had a presentiment of the appliances which our age affords. There is in the works of our French mediæval architects of the secular school, at the time of its first development, such complete cohesion, so close a connection between the requirements, the means, and the architectural form ; there is such an abundance of resources provided for the solution of the numerous difficulties inherent in the complicated requirements of our civilization, that nowhere else could we find precedent more fitted to facilitate the task we have to perform."

And again :[3]

" There is one of the systems of what is called Gothic vaulting which seems to have been designed in anticipation of structure in

[1] It would open an interesting field of enquiry to compare the various systems of construction with a view to discover which of them follows closest to Nature's methods, and whether a decision were come to in favour of a metal construction or not, it would have to be conceded that it follows very closely on certain organic forms, and that, too, where qualities, considered of some value in architecture, are their most striking characteristics. If the Norman shaft has its prototype in the trunks of the sturdy oak, the metal support may find its counterpart in the graceful palm.

[2] Vol. i., Lecture X., p. 469.

[3] Vol. ii., Lecture XIII., p. 129.

iron, viz., that which was adopted in England towards the end of the fourteenth century, known as *fan-vaulting*."

Perhaps the idea is rather fanciful, but it almost seems that the point at which architecture had arrived in the sixteenth century was premature, the architects of the time having outrun science in their haste to unfold the possibilities of their art; and that, in the natural order of events, this stage should not have been reached until a new material had been provided for their use; a material which was not available until three centuries later. Or, to put it another way, Science had not been developed so rapidly as it ought to have been, and hence the material was not forthcoming when required. But, whichever it may have been, it seems as though the course of Art and Science had not been concurrent, and, in consequence, an interval has occurred, during which architecture has had to rest on her laurels. There are signs that the naturally advancing stages of the two will again coincide. Science, in the shape of the modern engineer, is not the laggard this time; it is to be hoped that architecture will not be so coy as science was of yore.

But this point is not yet reached. In an historical and descriptive account of the Forth Bridge, given in the "Engineer" (February 28th, 1890), there is but one reference to beauty, and that by inference only, and one can almost detect in the writer (Mr. Westhofen) the fear of being thought heterodox in obtruding it at all. He says:

"Viewed (from the river), its simple lines, its well-proportioned parts, its impressive air of strength and solidity, and yet of lightness and grace, never fail to strike the mind of the beholder."

All qualities, be it noticed, which we constantly hear applied to correct architecture; but how are we to account for the following?

"The country immediately surrounding the site upon which the bridge now stands is strikingly beautiful. Whatever opinion may be held in regard to the lines of the bridge itself, it must be conceded that this bridge must be a discordant feature in a pastoral landscape. . . . .

"In the view down the estuary into the limitless ocean, from the grounds round Hopetoun House, the horizon falls in with the line of the rails of the internal viaduct, and thus shuts out all view most completely, while the lines of the bridge itself in geometrical repetition—with severe regularity—of triangles and squares, cannot be made to harmonize in the least degree with the soft and undulating lines of the adjoining landscape. Thus the best view of the landscape is from the bridge because the disturbing element is left out."

Surely the writer is mistaken in this? for the bridge, if it possesses the qualities above enumerated, must be beautiful; but perhaps in a sense so overpowering, that the contemplation of it imparts pain. It betrays a sublime indifference to the artistic opinion of poor puny humanity, by only concerning itself with the effect it produces in the head of the engineer. What has this Titan to do with anything else but the *head?* "Let other works, such as Gothic cathedrals, condescend to appeal to the *heart*, that may be their function, but it is not mine."

M. Viollet-le-Duc's strictures on architects, if, perhaps, too severe, are nevertheless interesting.[1]

"In their great bridge constructions our engineers have resolutely struck out a new path; but our architects have hitherto ventured no further than a timid adaptation of novel appliances to old forms. Sparing themselves the trouble of calculating, inventing, and contriving, under the pretext that such inventings, calculations, and contrivances are opposed to the formulas they have adopted, they prefer to exist on a past that is crumbling beneath their feet, and which will drag them along with it in its ultimate downfall. Amid a social condition in which everything

[1] "Lectures on Architecture," vol. ii., § 13, pp. 86, 87.

is changing with surprising rapidity, they alone, as if they were the sacerdotal guardians of a sacred doctrine, set themselves in opposition to progress in their works; while the greater part, even of the most capable, exclude from their investigations a considerable section of those architectural monuments of the past which might lead to new discoveries."

Mr. Eidlitz says:[1]

"It is a well-known fact that in the construction of roofs, bridges, and trusses, made possible by the invention of modern rolled iron, the calculation of the strains of a projected construction, and the determination of the sectional area of the various parts which resist these strains, are the least part of the engineer's labour in designing these roofs, bridges, and trusses. The greatest part of the work is, of necessity, bestowed upon the connections where strains are concentrated upon bolts or divided upon rivets, and where the material is constantly weakened by perforations, and must be constantly strengthened again by additional plates or special castings. Now when we look upon a structure of this kind, one that is well and conscientiously designed, these connections, or knots, as they are called, address us very forcibly, and convey a convincing expression of their strength and adequacy to do the mechanical work they perform. In them nothing is attempted beyond this adequacy of strength; but inasmuch as, by reason of economy and mechanical convenience, this cannot be attained by the mere weight of abundant material, but only by the most scientific application of the material at the disposal of the engineer, the result of these constructions is a species of art form, which speaks forcibly of mechanical work done, and is hence possessed of beauty. We perceive in these works of the engineer the true spirit of art-force and the resultant pleasurable emotion."

Again:[2]

"Art forms, especially architectural art forms, are the result of changes in ideas, in methods of construction, in materials, and in æsthetic reasoning. They are generally the gradual outcome of a series of ideas, or of a series of comparisons of the relationships of matter."

[1] "The Nature and Functions of Art," etc., pp. 483, 484.

[2] *Ibid*, p. 357.

And again :[1]

"Look at the treatment of cast-iron columns and other structural parts made possible by modern use of metals. They are more or less imitations of stone and wood constructions; but few of them devised by architects are modellings which can possibly result from the nature of the metal, yet the engineer has developed pure metallic forms unknown before, simply because he derives his wisdom from the laws of mechanics."

Mr. E. M. Barry says :[2]

"If the architect as an artist is to be separated from the architect as a constructor, I very much fear that it is the former who would go to the wall. To avoid this misfortune, I should deprecate a policy which might lead to so disastrous a conclusion. It does not, of course, follow that an architect must of necessity be as great a master of all the newest modes of construction as an engineer now claims to be. The applications of special science are so varied and extensive that we must of necessity have need of experts to be called to our aid as extraordinary circumstances may require."

That the architect is not so expert in iron construction as he is in that of stone, is obviously due to the fact that iron has not been, in the sense that stone is, a building material.

M. Viollet-le-Duc says :[3]

"If, then, architects would not wish to be classed, in the next century, among lost species and extinct historical individualities—such as astrologers, alchemists, and men in armour—it is high time they set themselves resolutely to work, for the venerable mysteries by which their dignity has been sustained are beginning to be exposed to the gaze of the vulgar; and, if the public should take it into its head some fine day to insist upon a rational explanation of what is being built for it, there will be a vindictive reaction against these ruinous caprices—these orgies in stone. It is not

[1] "The Nature and Functions of Art," etc., p. 284.
[2] "Lectures on Architecture," pp. 30, 31.
[3] *Ibid.*, vol. ii., Lecture XIII., p. 108.

by the mingling of styles, and combining, without reason or principle, the architectural forms of various ages, that we shall discover the art appropriate to our own, but by making the introduction of reason and plain good sense into every conception our first consideration; making use of materials in accordance with their respective properties; with a frank and cordial adoption of industrial appliances, and, instead of waiting for these to take the initiative, ourselves eliciting their production."

We can almost imagine with what enthusiasm the architects of the fifteenth century, after they had exhausted themselves in some supreme effort, would have received the announcement that metal was available for further aiding them in their restless endeavours to give form to floating visions, which, but for it, must ever remain in shadowland; and what flights might not builders, as bold as those who built the choir of Beauvais, have taken, had they had the advantages which we moderns possess in materials calculated to bear sixteen times the weight which an ordinary building stone can carry, and about the same number of times stronger under tension than wood. What they would have done with this material is the riddle of the architectural sphynx.

The initial mistake was made—and hitherto we have not retraced our steps—in trying to work out a rational treatment of metal with ideas drawn exclusively from stone architecture. Look at the Giant's Staircase at Venice, constructed at the close of the fifteenth or the beginning of the sixteenth century; is it not as Gothic as it is Renaissance, and in consequence out of all harmony with the pronounced Renaissance of the court in which it stands? Suppose that one of our fifteenth century architects had received the commission to build that staircase in the half-timbered style of that century, to what extent would the leading lines have differed from those existing? And, to

go yet farther in our hypothesis, suppose that a nineteenth century architect were commissioned to carry out the same work in metal, marble, terra-cotta, etc., would not the structural lines be similar to those of both the preceding? If this be a reasonable deduction, may we not assume a coalition architecture to be at least possible? Again, it is not difficult to imagine the interior of the courtyard of the Casa Miranda, at Burgos, designed on a Gothic basis, constructed in metal; an idea much assisted by the bracketted caps to the columns, so exactly suited to the support of iron girders.

If we could only break away from precedent as successfully as did the first builders of a half-timbered house, how easy would be the succeeding stages! M. Viollet-le-Duc, in advocating iron as a building material, does not quite free himself from precedent. He shows how stone vaults may be carried by iron; but what could a stone vault be doing in a metallic building? Many of his illustrations, clever though they be, are but some few steps in advance of the present method of using structural ironwork. Take, for instance, Plate 21 of "Lectures on Architecture," which shows a stone building partly supported on iron struts, while under the walls so carried, at the first floor level, are stone arches, which are actually hung up by stirrup-irons to the girders carrying the superstructure. Such incongruities will be sure to occur so long as we hesitate to break with stone and brick construction. Once accept the new conditions, and there would be no necessity to use stone or brick arches. M. Viollet-le-Duc would object to the casing of iron columns; but is there any valid objection to such a proceeding? *i.e.*, conceding the question whether this use of columns is permissible. Those who would object on the score of the sacrifice of truth, fix for themselves a high standard; but cannot they be met half-way? This is what

is generally proposed by those who cannot find it in their hearts to give up old principles, and yet who believe that the future will demand of them even this surrender. This compromise always takes the form of *partly* covering up construction, marble lining used on walls *in panels*, silver is *parcel-gilt*, etc. Could not iron columns be partially cased with some decorative material? Those who advocate the use of iron do not contemplate the necessity or even the advisability of covering it up (*i.e.*, for æsthetic reasons). The curious remark made by Mr. G. E. Street, as quoted on p. 108, requires a little consideration to account for its being coupled with the statement of his dislike to iron. He said: "Our great object is to show the construction of our buildings in every possible way." Iron, if used, he seems to imply, *must be concealed*, and therefore a Gothic architect could not countenance it. Such seems to be the thought that suggested the words quoted. But before Mr. Street uttered these words, Mr. Burges had used an iron girder in a warehouse in Thames Street, in such a manner as he conceived that a Gothic architect might use one without doing violence to his principles; and although at that time it was considered "plucky," it was regarded as eccentric, and he had but little following. It certainly did not look quite correct to make a nineteenth century girder do what a brick arch should have been made to do, because the design of the upper part of the structure was in accordance with a style in which an arch would have been a proper feature. A want of harmony was at once apparent between the girder and the superstructure. The relative value of the two, in Mr. Burges's estimation, was, in a manner, symbolized by their respective positions and functions in the building; which building was to be in the style of the thirteenth century, the nineteenth century girder simply bearing it on its back. This want of

harmony is referred to by M. Viollet-le-Duc in the following passage :[1]

"And so we hear it maintained in the present day, as it was formerly, that iron cannot be employed in our edifices without dissembling its use, because this material is not suited to monumental forms. It would be more consistent with truth and reason to say that the monumental forms adopted, having resulted from the use of materials possessing qualities other than those of iron, cannot be adapted to this latter material. The logical inference is that we should not continue to employ those forms, but should try to discover others which harmonize with the properties of iron."

The objectors to the use of iron, to whom reference is made in the above quotation, are not altogether wrong in their contention, for although it would not be considered a legitimate argument against its use under any circumstances, yet with respect to monumental architecture it becomes a question whether a nation with a long pedigree, and with many state functions and ceremonies which, although they have for the most part lost their meaning, still bring home to the national mind the origin of much which has made the nation what it is, may not be justified, for the sake of the patriotic associations connected with it, in erecting its national buildings, governmental, civic, etc., in the traditional style of the ages from which our modern civilization gradually emerged. But in conceding this much, all that can be said in favour of a modern style of architecture is not in the least impaired. There is much sentiment associated with the coronation chair, and if it should be accidentally destroyed it is probable that public opinion would demand that the new one should be as much like the old as it could be made ; but it does not follow that we should like all our own chairs to be copies of it.

[1] "Lectures on Architecture," vol. ii., Lecture XIX., p. 380.

The following remark by Mr. E. M. Barry leads to the inference, that had he been advocating the use of iron, he would have hesitated to introduce it into ecclesiastical buildings:

"In modern domestic work we must often welcome novelties which we do not desire to see in our churches. We may, in the latter case, be content to rest satisfied with piers which are obstructive, and arches of unnecessarily contracted span; but in secular buildings convenience must rule, and science be invoked to aid us to overcome difficulties and economize space."[1]

In his "Studies of American Architecture,"[2] Mr. Schuyler evidently takes the same view, he says:

"As it was in the beginnings of the art of building, so now stone remains the material of monumental structures."

Sir G. G. Scott, in the last chapter of his "Gothic Architecture, Secular and Domestic," gives his views as to the style of the future, and these are very similar to those enunciated here, but arrived at in a different way. He starts from our own style, through the prevailing Classic to the Italian Gothic (which latter he strongly recommends should be studied, from which we infer that, in his opinion, the new development would be somewhat similar to it), until, finally, the latest born is ushered into the world.

Here it is advocated, starting from the same point, and ignoring everything which savours of the later Renaissance; of Vitruvius and his "five orders," and, for the present, in fact, everything but construction; and, as the limits of invention in the older materials seem to have been reached, let us start with a new material, and work in that material on Gothic principles, leaving the style, as such, to work itself out. But as the nature and properties of metal and wood are so similar, the probability is that

[1] "Lectures on Architecture," p. 432. [2] P. 98.

the new development would, as before remarked, be more on the lines of our wooden architecture, and not so much on those of stone (hence might result a similarity to Italian Gothic) leading to the evolution of the "new style," which, for the present, may be less grandiloquently, and more correctly termed the "new construction."

But supposing the "Classic architects" of the day try iron as a building construction. If they follow its lead they will have to eschew the "five orders," Vitruvius and all his works, and, in all probability, they would ultimately arrive at the same point, though approaching it from another direction. And as Italian Gothic was produced by a mixture of, say, one of Gothic to three of Classic, so our nineteenth century style would probably result from a mixture of three of Gothic to one of Classic, and the proportions differing in each country of Europe would be determined by the difference of race, climate, etc., producing in each country a national style. Thus Europe would again have a *dozen* styles instead of Professor Kerr's "*one*," and "the battle of the styles" would be brought to a very satisfactory issue. Neither party would have lost or won; for the Classicist could say that he had Italianized Gothic, whilst the Gothicist could retort, with equal show of reason, that it was he who had Gothicized Italian.

Mr. E. M. Barry says:[1]

"Of late years so much attention has been given to Italian Gothic architecture that many of our architects have adopted details taken from it into their own designs, which had been previously based upon the purer styles familiar to them in their own country. In this way a cosmopolitan character has been impressed upon certain works; and although there are those who condemn such a process on principle, I cannot see any reason for such condemnation, apart from the special merits and demerits

[1] "Lectures on Architecture," p. 362.

of each case. We are entitled to regard our art as a whole, and its history lies open before us. If we are of opinion that certain forms with which our ancestors were unacquainted, but which are known to us, are good in themselves, there can be no valid reason why we should refuse to avail ourselves of them in our work of to-day. Students must bear in mind, however, that to do this well and reasonably is a matter of no small difficulty. They must not expect to avoid the reproach of incongruity by pointing to their sketch-books, and giving the name and date of every detail. The essential quality of all true art is its fitness, and in adopting southern detail into northern work, the presumption is against the process. We should, therefore, be very sure that in attempting fusion we are not sacrificing principles, or offending common sense. With this proviso, the lessons of Italian Gothic are before us, and may, in certain cases, be followed with advantage."

It is clear that a fusion of northern with southern Gothic, or of northern Gothic with Italian, would result in much the same thing—southern Gothic, to start with, being a mixture of the other two.

In his "American Architecture,"[1] Mr. Schuyler further says:

"We have seen that an architect who starts from Renaissance architecture, and an architect who starts from Gothic architecture, if they faithfully scrutinize their precedents, and faithfully discard such as are inapplicable, in arriving at free architecture will arrive, so far as style is concerned, at much the same result."

But, as has been before said, it is not with *style*, as such, that there is any need, at first, to trouble ourselves; and if opinions are here expressed somewhat freely as to the direction our future art should take, and following Sir G. G. Scott's suggestion, advise that a hand should be stretched to Italian Gothic, and, indeed, to all art, then the other hand must, with equal sympathy, grasp that of modern science, and, perhaps, go further, and establish a co-partner-

[1] P. 50.

ship with her—the æsthetic with the technique arts—which shall be to their mutual advantage, and be characteristic of the times through which we are passing.

Mr. Morris says :

"What the absence of this art of architecture may betoken in the long run it is not easy for us to say : because that lack belongs only to these later times of the world's history, which as yet we cannot fairly see, because they are too near to us ; but clearly in the present it indicates a transference of the interest of civilized men from the development of the human and intellectual energies of the race to the development of its mechanical energies. If this tendency is to go along the logical road of development, it must be said that it will destroy the arts of design, and all that is analogous to them in literature ; but the logical outcome of obvious tendencies is often thwarted by the historical development ; that is, by what I can call by no better name than the collective will of mankind ; and, unless my hopes deceive me, I should say that this process has already begun, that there is a revolt on foot against the utilitarianism which threatens to destroy the arts ; and that it is deeper rooted than a mere passing fashion." [1]

If this quotation be carefully read we shall be understood when we ask, do not the cathedrals of the middle ages prove that "the development of the human and intellectual energies of the race" are *not* antagonistic to "the development of its mechanical energies ?"

Architecture lies on the border land of art, and it would be better were she to make friends with her neighbour (science) in the way indicated in these pages, and so bring about an "historical development" which will thwart "the logical outcome of obvious tendencies," and thus save art from what Mr. Morris regards as her natural enemy.

Mr. Aitchison says : [2]

[1] "Gothic Architecture," pp. 3-5.
[2] Lecture on Architecture, 1894.

"As far as I know, there is no *a priori* reason why art and science should not flourish together, although in latter times we know they have not. We should now think it absurd for eloquent writers on science to advocate the worship of the rushlight, when we have the Argand lamp, gas, and the electric light; but in art we are in that unhappy position, that some of the highest eloquence of the day is devoted to the worship of the rushlight, and to the prophecy that it can never be surpassed."

Mr. E. M. Barry says :[1]

"It is reasonable and right that we should do justice to the scientific spirit of the age, which has given us the marvels of the steam-engine and the electric telegraph; but we cannot forget that man is not altered by these discoveries. His powers over Nature are enlarged, his cravings for knowledge are more easily satisfied, but he is nevertheless the same. Can he solve the great mysteries of life and death any better than when the world had just been born; or can he look forward into the future with more confidence than his forefathers of thousands of years ago? No, indeed, however much the mechanical side of our nature may have acquired, the imaginative and emotional cravings are the same as they ever have been, and among these is the love of beauty in art. What was beautiful thousands of years ago is beautiful now, and the perfection of the human form divine was first displayed by the first man.

"We need not, I hope and believe, despond as to the future before us, in which mechanical ingenuity threatens, according to some, to thrust out beauty. Men will never be satisfied with stones instead of bread, and will still appeal to art to satisfy the higher aspirations of the soul."

In referring to the harmony which should exist between science and art, M. Viollet-le-Duc says :

"Is it the architects of repute who have been the promoters of this progress? Unfortunately, no! It is to our engineers that it is due; but, since their architectural education is very limited, they have employed iron merely in view of practical utility without regard for artistic form, and we architects, who ought to have

[1] "Lectures on Architecture," pp. 182, 183.

been able to afford them aid when form was in question, have, on the contrary, done our utmost to hinder the adoption of these novel appliances; or, if we have adopted them, it has been merely as a mechanical means, which—I repeat it—we have been careful to conceal beneath certain forms hallowed by tradition. Hence it has been concluded, not without reason, that architects are not sufficiently *scientific*, and that engineers are not sufficiently *artistic*. And yet, in view of our present requirements and our novel appliances, it is more than ever necessary that the builder should be both artist and savant if we would obtain original artistic forms, or, more correctly, artistic forms in harmony with the requirements of our age. If we take a fair and unprejudiced view of things we cannot shut our eyes to the fact that the professions of the architect and the civil engineer tend to merge one into the other as was formerly the case. If it is the instinct of self-preservation that has caused architects of late to resist what they regard as the encroachment of the engineer on their domain, or to set themselves against the methods adopted by the latter, this instinct has badly served them, and, if it rules, will have no other result than gradually contracting the architect's field and limiting him to the function of decorative designer. A little reflection will show us that the interests of the two professions will be best served by their union, for in point of fact the name is of little consequence; it is the thing which is essential, and art is that thing. Whether the engineer acquires a little of our knowledge and love for artistic form—so far as that love is rational and is something more than mere sentiment—or whether the architect enters upon the scientific studies and adopts the practical methods of the engineer, whether both thus succeed in uniting their faculties, knowledge, and appliances, and thereby realize an art truly characteristic of our times, the result cannot fail to be advantageous to the public and creditable to the age. Some endeavours in this direction, it may be observed, have not been successful, and the city of Paris may well congratulate itself on having engaged one of its most distinguished architects to carry out, in the building of the Halles Centrales, the idea and general design of an engineer. If among the numerous buildings erected of late years this, better than any other, fulfils the conditions of the programme, and if it is approved both by the public and by professional artists, is it not to the concurrence of two orders of intellect that such a

result is due? What danger, therefore, or what disadvantage to art would ensue if the architect or the engineer combined in himself those two elements which are now separated. What could the architect reasonably hope for from the maintenance of certain absolute dogmas respecting art which are at variance with what our times demand? Or what advantage could the engineer expect to gain by ignoring the liberal studies of art, and confining himself more and more within the limits of formulas? Whether fifty years hence the engineer calls himself an architect, or the architect an engineer—as the two professions must inevitably merge into one another—I cannot but think that the rivalry or distinction which is sought to be kept up between these two branches of art, which are destined in the nature of things to coalesce, will appear somewhat puerile."[1]

Mr. E. M. Barry observes:[2]

"And now let us believe that there is a place in this nineteenth century for art, and especially for architecture. We must not be impatient if each succeeding age develops new characteristics, nor must we quarrel with the stream of progress if it make to itself new channels, leaving wastes and shallows where once swept a deep and silent flood. Rather let us be confident that we are not placed in this our own time, to repine at our lot, and indulge in complaints that others have been better off than ourselves. Let us further be sure, that as long as the love of beauty is implanted in the human mind, it is treason to art to declare the latter incompetent to deal with the problems of its day."

It serves no useful purpose to fume and fret about the greater estimation in which engineers are held by the public. What else could be expected? A discriminating public can make a distinction between the almost creative work of the engineer and the work, in most cases anything but creative, of the average architect. Architects must not lose their self-control, as we almost imagine Mr. Bernard Whelan to have done when he penned the following:

[1] "Lectures on Architecture," vol. ii., Lecture XII., pp. 70-73.
[2] "Lectures on Architecture," p. 184.

"The present pets of a dilettante world are the engineers. They are taken on their own survey, which is a high one. Like the builders of Babel they both work and talk; they toil in the offices of Westminster and in the workshops of the north; they spin gossamers of lattice girders, in spans and altitudes enormous, before the wondering upturned gaze of mortals. Their steamships sail and sink on every ocean; their corkscrew railways twist through the hard heads of mountains. They take ironclads out to sea, where they occasionally leave them. . . . Their virility captivates an effeminate time: their scorn of beauty endears them to the sensation-seeking crowd. The appalling ugliness and size of the Forth bridge has confirmed their claim to the awe and admiration of mankind. Therefore their credit is in the land; their reputation, in our day, shall not be taken from them. Kings shall distribute titles to them, the solemn chorus of the penny press shall extol them."[1]

His Eminence Cardinal Wiseman held similar views. In a published lecture given at South Kensington Museum (1864) on "What are the prospects of good architecture in London," he says:

"If I have spoken freely of defects, and still more of dangers, I have done so in the desire of associating better the resources of the engineer with those of the artist. The impelling force of the one is necessity, the attractive power of the other is grace. If the first is compelled sometimes to produce practical hideousness, why should not the latter drape it with even an elegant inutility? In a former lecture I endeavoured to show how Science might bear Art on his stout shoulders when obliged to descend to the more practical things of earth; in this I have tried to suggest how Art may, in her turn, bear Science on her pinions, when he must fly across chasms, rise above mere mechanical performances, and boldy court the eye of an educated and now artistic people. Even if science must emerge from its Cyclopean forges and its potent laboratories in the shape of a gigantic chimney, why should not art fly up to it, and bestow on it elegance of proportions and some richness of details?"

In "Lectures on Architecture" M. Viollet-le-Duc says:

[1] "An Architect in Exile," pp. 5, 6.

"The revival of architecture in the west, towards the middle of the twelfth century, exactly coincides with the great intellectual movement of that period in Literature, Science, and Philosophy.

"It was in the beginning of the thirteenth century that attention was turned towards physical and mathematical science; and architecture immediately joined in the movement, and completely altered the traditional forms which it had hitherto retained.

"The same phenomenon may be observed in the sixteenth century; it was by taking advantage of the scientific progress of that brilliant epoch that architecture modified the superannuated forms of the period called Gothic.

"But few ages can compete with our own in the glory of its scientific achievements. Do our architects, like their predecessors, eagerly avail themselves of this source of æsthetic renovation? No; they prefer to ignore the close connection of science with art, and to give us public buildings of a hybrid style, more or less influenced by the debased architecture of the last two centuries. Well, such being the case,—I say again in conclusion,—if they thus persist in rejecting that light, and in refusing that aid which science would gladly give them, the function of the architect is obsolete; while that of the engineer is commencing, that of men really devoted to construction, and who will make purely scientific knowledge their starting-point to constitute an art deduced from that knowledge and from the requirements of the times."[1]

Again:

"It [history] shows us, moreover, that the arts, and architecture in particular, have culminated during periods of scientific development. Architecture is the sister of science; the former undergoes modifications and advances hand in hand with the latter, and reaches its point of greatest splendour when science itself has just passed a glorious stage in its career. But we must make this distinction between science and art; science suffers no eclipses; what it has acquired by means of observation, analysis, and logical deductions, is a permanent gain, and is, as it were, incorruptible. It is not so with that art which is nearest of kin to science, viz., architecture. Architecture, whose principles are based more directly than any other art on science, may dis-

[1] Vol. ii., conclusion, p. 438.

regard this support to such a degree as to be entirely unconscious of its value, and so decline. And it can only recover itself by immersion in the vivifying fount of science."[1]

In writing on the subject of progress Mr. Fergusson makes the following remarks on engineering progress in "An Historical Enquiry," p. 158:

"Of those arts which in this country have been cultivated on the most common-sense principles, and consequently which have been most essentially progressive, there is none more remarkable than that of civil engineering; and, as no one has more narrowly escaped becoming a fine art, it would be difficult to get a more apt illustration of the argument, and if we take any series of engineering works, such as Eddystone, Bell Rock, and Skerryvore lighthouses, or any works connected with canals or railroads, or bridges, we shall easily see how progress is effected, and to what it leads. One instance, however, must here suffice, and I will take that of the London bridges as the most intelligible without diagrams. Westminster Bridge was completed in the year 1749, and, both artistically and constructively, is about as bad a specimen of the art as we possess. About twenty years afterwards Mylne built that at Blackfriars, which is in every respect a most decided improvement on the other, avoiding most of its faults and adding many improvements which further experience suggested. The progress in the art was so steady, that when, in the beginning of this century, Waterloo Bridge was designed, it was made the most perfect structure that had at that period been built, either in this or any other country. Twenty years afterwards, however, it was surpassed by new London Bridge, which was then, and is now, the most perfect existing, though were another of the same class wanted our engineers could easily build a better. And we know that this art is progressing, and must become more and more perfect, having already surpassed both the Classical and mediæval styles, to which retrogression is now, therefore, luckily impossible. Had this not been the case, the archæologists would have raised their voice against the removal of that venerable relic of antiquity, old London bridge; and with good reason, for it was built by the same men, and in the same age, as our great cathe-

[1] "Lectures on Architecture," vol. ii., conclusion, p. 436.

drals, and showed as much constructive skill, as appropriate an application of ornament, and in every respect was as worthy of admiration as they are. But the fate of the two arts has been singularly diverse. All rejoiced in the removal of the old encumbrance, and its being replaced by a new and modern design of the nineteenth century;[1] but if it were proposed to apply the same reasoning to Westminster Abbey, and instead of shifting and altering the internal fittings of its most inconvenient choir, the Dean and Chapter had determined to pull down the building, and replace it by a modern structure, all England would have risen in arms against them to prevent the sacrilege. Yet I feel convinced, had we cultivated architecture with the same earnestness and steadiness of purpose as we have done its sister art, we should have applauded these designs with regard to the abbey as sincerely as we do that of the City authorities with regard to the bridge, and Parliament would have voted money, and every individual lent his aid to the good work."

In his "Lectures on Architecture,"[2] etc., Owen Jones says:

"The Protestant religion, no longer requiring in its temples the assistance of architecture, its study would avail us little towards the development of a new style. But as we have attempted to show that the great works of the age are the result of *science* only, I think we should endeavour to connect ourselves more closely with it to receive knowledge and afford art. Thus, to make my

[1] Mr. E. M. Barry in his "Lectures on Architecture," p. 63, says: "Looking to the interest, both architectural and historical, which concentrated itself in Old London Bridge, its removal in favour of the present structure must have caused many a regret, and might have been expected to excite to frenzy any society for the preservation of ancient monuments, if such a fraternity had then existed. The time came, nevertheless, when Old London Bridge, with all its picturesqueness, had to be surrendered, because it did not comply with the principle of combination of utility with art. The old bridge-builders had done their utmost, and had constructed such piers and arches as were then considered the best possible; but with increased scientific knowledge, these had become intolerable, and an obstructed waterway could no longer be permitted. New London Bridge thus arose from utilitarian considerations, and was, in like manner with its predecessor, an example of the constructive art of its day."

[2] P. 23.

meaning clear: the use of cast-iron in buildings is constantly applied with science, but never with art."

In the discussion which followed a paper read by Mr. A. Beresford Pite at a meeting of the Architectural Association on November 10th, 1893, his subject being "How to Study Design," the paper was generally considered to be pessimistic, and this view appears to be warranted by much that it contains. The opening sentences take the form of a string of questions, in some of which are wrapped truths far too unpleasant to be palatable if not masked in this way; they require no answer, they answer themselves. Others were intended to suggest certain thoughts, and were successful in doing so. For "a gloomy outlook" was evidently the under-current of thought running throughout. Copying old work was reprobated generally by those who took part in the discussion, and not less emphatically than by Mr. Pite himself; so that we may safely assert that we have arrived at a period when the claims of by far the larger portion of the work to be classed as genuine architecture, since the sixteenth century, must be cast aside. But is there anything suggested which would direct the aims of the student? The answer must be, practically *nothing*. There are, it is true, some generalized principles of the art, about which all are agreed, but how to apply them? That "a building should express its purpose," Mr. Cole A. Adams said, "had been often remarked in that room before;" everyone accepts it as a fundamental truth, and when we add to this another—that a building shall be able to account for its existence—we obtain the first requisites for a fair start in the right direction. As there are many essentially modern requirements to be met, which, before the nineteenth century, no one could have so much as dreamed of, there is plenty of scope for the application of the first principle. In what way

can similar scope be provided for the second? Has not all the expression possible been wrung out of the old materials, and must not we seek it in new? Mr. Pite asks:

"Are not we perhaps on the wrong tack altogether, and only manufacture picturesque grottoes of ancient relics while the genuine and characteristic architecture of our age is to be found in the works of engineers, mill and factory builders, and gin-palace fitters?"

Just so, and why? the answer is obvious. He again reverts to engineers' work, and asks:

"Why should architects segregate themselves, as if afflicted with an ancient leprosy, from the life of the city and world of to-day? Why should they leave all that is simple and direct in architecture to engineers, and lose their right to even the barren title of architect? has not the Forth Bridge a piquant power of form, and a real, if not ideal, beauty, without the assistance of what you and I call architecture? . . . . Also, in other directions, why are characteristic buildings of the age, such as the Crystal Palace and the Albert Hall, eminently works of architecture, though not of architects?"

And again we say the answer is obvious. It is that the engineer has acknowledged the above principles and works on them (the nineteenth century has outgrown the use of stone), and he has the courage to adopt for his purpose iron—the other principle naturally follows.

Mr. Leopold Eidlitz says:[1]

"In truth a proper art use of old forms under new conditions is a practical impossibility. To illustrate: a painter who depicts the warrior paints him in mediæval armour; he thinks a knight in armour exceedingly picturesque. The word picturesque with him embodies all that is good and proper in the way of dress, accoutrement, and physical development responding to a system of attack and defence carried on with certain given weapons and with an armour devised to resist these weapons. If you visit the studio

[1] "The Nature and Functions of Art," etc., pp. 289, 290.

of this artist you will find there swords, foils, breastplates, helmets, spears, and chain armour, in fine, every contrivance of offence and defence known in the middle ages. The artist has lived among these objects so long that he is able to draw them on paper or paint them on canvas in every conceivable combination consistent with their use. What is more, he has acquired a love for these forms, and he deems them eminently beautiful. Now let us imagine that a patron of this painter demands a picture of a warrior which shall not be a mediæval knight, nor a Roman, or Greek, or modern soldier, but purely an ideal invention. Could the artist invent the figure of a warrior by merely trying to sketch and paint one? Certainly not. He could produce nothing but Greek, Roman, mediæval, and modern warriors, or imperfect and incongruous combinations of all of these. Is the thing impossible? No, it is not impossible; but the process demands a species of skill not possessed by the artist. In the first place, a series of weapons would have to be devised upon principles heretofore not applied, and then an armour to resist these weapons. All this may be theoretically done by some person versed in possible methods of war, revised and corrected by an able military engineer, practically executed by a skilful armourer, and then the painter could paint a picture of an ideal warrior which would rank in beauty with pictures of the warriors of the past. If architecture is to be equally successful, the architect must combine with his art other technical skill corresponding to that of the general, the military engineer, and the armourer, and which in his case amounts simply to a thorough knowledge of the theory and practice of mechanical construction."

Iron as a constructive material has been more generally used in roofs than in any other part of buildings, and we all admit that if we limit its use to that, not much harm need be done. Indeed, the Gothic architect had to cast his antiquated notions to the winds when the task was assigned to him of throwing a roof over a large railway station. The aid of modern science had to be invoked, and one fails to see how the task could have been accomplished had he not availed himself of it. Hence the St. Pancras Railway Station, built by a Gothic architect, has a roof of

iron, with the same want of harmony which has been mentioned as evident in Mr. Burges's warehouse, and due to the same cause, and this in spite of the effort made to assimilate it with the style by making the roof pointed. There is no real connection between it and the building which masks it; and it would appear that in thus pointing the roof he was running counter to the rational use of the material, which requires no break at the crown. It serves only to check the eye when following round the grand sweep—but the building was to be Gothic, and therefore it *must* have a pointed roof. Then as to the coverings at St. Pancras; light being necessary glass was used, and it is somewhat curious that iron roofs have seldom been adopted except where light was required, and therefore glass and iron have come to be as naturally allied as bricks and mortar. Other coverings are available for this form of roof, such as lead, copper, zinc, etc., but, if slate or tile be used, a ridge would be necessary. Although, in times very remote, metal was pressed by the builder into his service, it seems, as a rule, to have been applied as a protection only to such construction as is mostly obtained by the use of wood, *i.e.*, a framework. The facility with which it could be beaten out, or cast into thin sheets, naturally suggested this use of it; but, owing to its great cost, consequent upon the imperfect means of obtaining and working it, it never gained such a permanent hold as did other materials.[1]

The ancient practice dwindled down to the use of metal as a protection to the timber construction only, and for decorative purposes, as we know was the case at Nonsuch, and, finally, as far as the walls are concerned, its use died

[1] It was reserved for the modern temporary church builder to develop this treatment by the application of iron for his purpose, and to this circumstance, probably, may be attributed the prejudice existing in many quarters against metallic building.

out altogether; but the *roof* being of timber its application to that feature became, in all important structures (especially in this country), the rule, which obtains in the present day. Singularly enough, it is to the *roof* that engineers have chiefly directed their attention, and metal, hitherto used as a covering only, is now applied to the construction itself. The floor, too, has become subjugated, so that now only the walls remain to be dealt with.

Westminster Bridge was designed to harmonize in style with the Houses of Parliament, and they being Gothic it was considered right that the bridge—the fact of its having to be an iron structure not altering the circumstances—should partake of the same forms, so it was constructed in the style of the fifteenth century. Could anything be worse? Here we have arches in iron similar to the stone arches which would have been there had it been a stone structure, and all its detail finding its prototype somewhere in stone "Gothic!" Why, the Forth Bridge, without a single distinctive Gothic form, is a thousand times more Gothic, being built on Gothic principles; and as to showing construction, no fault can be found with it on this score. It is not possible, of course, to say what the Forth Bridge would have been like had it been constructed of iron in the fifteenth century by builders of the period possessing a knowledge of modern science; but it may be regarded as certain that it would have borne a far greater resemblance to the recent structure than to that at Westminster.

The principle upon which the Forth Bridge is constructed—the cantilever—is not new. It was known to the ancients and applied by them; in fact, it has never, in some form or other, been out of use. What may be considered as the prototype of this bridge has been known these two hundred years to have existed in Thibet. When the engineers started their work, they did not attempt to discover a new principle of

construction which would meet the exigencies of the case, but to decide which of four well-known principles best met the requirements, and having decided to adopt that of the cantilever, the result was that, with the above exception, an entirely novel structure was built. To quote the words of Mr. Westhofen before referred to :

"It must be conceded, however, that, except as regards principle, the design is essentially novel, but the novelties are dictated by the unexampled size of the structure, and are due simply to the perfect adaptation of the principle of the continuous girder, and the general laws regarding the strength of materials, to the special conditions of the case."

We have said that the principle is Gothic ; but of course stone did not readily lend itself to this mode of construction to any marked extent ; we, therefore, do not find the principle often applied in stone construction ; wood being more adapted to its use, we frequently find it applied in half-timber work, whilst metal opens out an entirely new and more general application of it to architectural construction.

In ancient days the various styles, as they arose, retained for a time sufficient of those older ones which they supplanted to show their origin—the stone of its wood prototype, etc.—and so it is but natural that modern builders using metal, should introduce stone forms. But this was allowable only in the times "of our ignorance ;" they must disappear, or leave but a *suspicion* of their origin behind.

Something analogous to this has occurred in ship-building. Naval architects did not sit down to design an iron vessel with any preconceived notion of form. The wooden ship required one set of conditions to be applied to its building, and when iron casing was first used there was little need to alter the form ; yet it did tend to modify it. It was only when gradually awakening to the fact that the

use of wood was to be altogether superseded by that of iron that the consequent new conditions were realized, and from the rational working out of the problem the modern battle-ship was evolved ; and when the engineer had met all the requirements, and saw for the first time the resultant shape, he was probably as much surprised and disgusted as every lover of the picturesque old wooden line-of-battle ships has been ever since. But that was the thing which came from the application of certain principles, which the engineer had determined should guide him, and the "First Lord" himself was almost as responsible for the type, with which we are now tolerably familiar, as the engineer who worked out the problem. Supposing that the style of the old "three-decker" had been called Gothic (which, judged by principles, it most undoubtedly was), is the modern fighting-ship less so ? Has not the form of the latter grown as naturally from the requirements and out of the nature of the material used as was the case in the former ? But had our naval architects been as great lovers of archæology as our revivalists they would have given us reproductions of "Great Harrys" in iron.[1] Perhaps it is fortunate for the ships that their designers, our naval architects, are not fettered by the existence of mediæval navies, as our architects have been by the presence around them of mediæval buildings. What would the "Second Lord" have thought of and said to the "First Lord" if the latter had insisted on following precedent, and on rejecting the new forms because they did not coincide with his anti-quarian notions ? Were his preferences to stand in the way when power, safety, speed, etc., were at stake ? But,

[1] We are aware that the analogy between architecture and ship-building should not be strained, but we think that archæological tendencies may find lodgment in the brain of a First Lord, as in that of anyone else.

strange to say, now that we have become accustomed to them, these iron monsters do not appear so ugly. And why? Because they so exactly fulfil the object for which they were built, and being founded on truthful construction, they *must* give pleasure to the mind and ultimately to the eyes; but at present many have so persistently focussed their eyes on the middle ages that it will take them some time to get sufficiently accustomed to the shortened vision which will permit of their making the acquaintance of beauty in any modern garb. The use of iron as a house-building material in substitution of stone, etc., would not involve so great a departure from the old types as has been the case in ship-building; the requirements of the former remain by comparison stationary, whilst those of the latter are being constantly modified and expanded; so that when iron or other metal is substituted for stone as a building material, it is presumable that the divergence of type will be no greater than that which took place when the half-timbered houses in the fourteenth and fifteenth centuries were reasoned out on Gothic lines. Mr. Eidlitz says:[1]

"Architecture deals with forms classified chronologically, but not under any system which involves their causes, or the principles upon which they have been developed, or the ideas which they represent. If the student of mechanical engineering were sent into the world to examine machines as he finds them in operation, or depicted in books, with no other guide than the dates of their construction, with directions to select those which seem to him useful, without being informed beforehand of the principles of mechanics, the nature of the lever, the inclined plane, the cog-wheel, the pulley, and the application of those elements of machinery to mechanical work, the result would be that mechanical engineers would select machines to please their own fancy or that of their clients—machines which answer the purpose indifferently, or perhaps not at all—and, also, that no new machines would be created. This is precisely the condition under which the student

[1] "The Nature and Functions of Art," etc., pp. 455, 456.

of architecture pursues a knowledge of art, and this is the sort of judgment by which he applies art forms. He examines the *répértoire* of past completed art forms, and selects from these what may please his fancy or that of his client."

Mr. Ruskin—as before mentioned—confessed that he could see no valid reason why iron should not be used for building; nevertheless it would be difficult to conceive of the gifted author of "The Stones of Venice" championing the cause of an iron architecture;[1] and yet there are many passages in his works which would require little or no

[1] It may be interesting to recall to mind the passage, so thoroughly characteristic of Mr. Ruskin, in which he refers to this subject. It is therefore subjoined :—"I cannot now enter into any statements of the possible uses of iron and glass, but will give you one reason, which I think will weigh strongly with most here, why it is not likely that they will ever become important elements in architectural effect. I know that I am speaking to a company of philosophers, but you are not philosophers of the kind who suppose that the Bible is a superannuated book; neither are you of those who think the Bible is dishonoured by being referred to for judgment in small matters; the very divinity of the book seems to me, on the contrary, to justify us in deferring *everything* to it, with respect to which any conclusion can be gathered from its pages. Assuming, then, that the Bible is neither superannuated now, nor ever likely to be so, it will follow that the illustrations which the Bible employs are likely to be *clear and intelligible* illustrations to the end of time. I do not mean that everything spoken of in the Bible histories must continue to endure for all time, but that the things which the Bible uses for illustration of eternal truths are likely to remain eternally intelligible illustrations.

"Now I find that iron architecture is indeed spoken of in the Bible. You know how it is said to Jeremiah, 'Behold I have made thee this day a defenced city, and an iron pillar, and brazen walls against the whole land.' But I do not find that iron building is ever alluded to as likely to become familiar to the minds of men; but, on the contrary, that an architecture of carved stone is continually employed as a source of the most important illustrations. A simple instance must occur to all of you at once. The force of the image of the corner-stone, as used throughout Scripture, would completely be lost if the Christian and civilized world were exclusively to employ any other material than earth and rock in their domestic buildings. I firmly believe that they never will."

alteration, had their author considered the possibility or probability of a new material.

To cite an instance :

"The variety of the Gothic schools is the more healthy and beautiful, because, in many cases, it is entirely unstudied, and results, not from mere love of change, but from practical necessities. For in one point of view Gothic is not only the best, but the *only rational* architecture, as being that which can fit itself most easily to all services, vulgar or noble. Undefined in its slope of roof, height of shaft, breadth of arch, or disposition of ground plan, it can shrink into a turret, expand into a hall, coil into a staircase, or spring into a spire, with undegraded grace and unexhausted energy; and whenever it finds occasion for change in its form or purpose, it submits to it without the slightest sense of loss either to its unity or majesty,—subtle and flexible like a fiery serpent, but ever attentive to the voice of the charmer." [1]

It can, we infer, adapt itself to anything, hence it should not be difficult for it to conform to the requirements of a new material. Hence it may be said that it could adapt itself to any material. Mr. Ruskin's definition of "Gothic," however, differs from the sense in which it is used here, in that he makes the style absolutely dependant on form. If his teaching be correct, metallic architecture is not admissible, for iron cannot legitimately adopt stone forms. Perhaps the professional mind will more readily agree with the following opinion of professional architects, M. Viollet-le-Duc and Mr. Eidlitz, the former of whom says : [2]

"All discussion on these points resolves itself into this: Is it the *letter* or the *spirit* that you should follow when anterior arts are in question? If it is the *letter*, let us copy the Greeks, the Romans, the works of the Renaissance, or the middle ages, without distinction, for these various forms of art offer us admirable productions; but if it is the *spirit*, the case is completely altered; the question is then no longer that of adopting a form, but of

[1] "Stones of Venice," vol. ii., chap. vi., § 38, pp. 178, 179.

[2] "Lectures on Architecture," vol. ii., Lecture XI., pp. 14, 15.

ascertaining whether the conditions now existing are such that you ought to adopt that form: for if the conditions are different, the form, which was a rational one simply because it resulted from a rigorous attention to a special condition, has no further reason for its existence, and should be abandoned. That we should reason like Aristotle is most commendable; but that we should adopt all his ideas is quite another thing."

And Mr. Eidlitz says:[1]

"This is no reason, however, why we should reject the scheme of Gothic architecture, as it is vulgarly termed, or Christian architecture, as Kugler properly calls it. The architecture of the mediæval cathedrals, considered as a system, especially when we contemplate it in its principles rather than in its completed forms, may, without fear, be accepted as the most perfect development of architectural art known to us, and may well serve as a proper starting-point for future efforts—always provided that we confine ourselves to the principles manifested in it, and not to its forms; and that we apply these principles to create such forms as will express our own ideas, and not those of the middle ages."

On this subject Mr. T. G. Jackson says, in "Modern Gothic Architecture:"[2]

"To say that nothing must be done without precedent is to deny the existence of that elasticity in Gothic art which is the very quality that, more than any other, fits it for revival and adaptation to our modern use."

Again:[3]

"It is on this point that we differ from the Formalist and Purist. They think that the essence of the style consists in the use of certain recognized and recognizable architectural forms and features. We hold that the essence of the style consists in the application of certain catholic principles of taste and utility; that the recognized forms and features of our ancient Gothic architecture are only the result of the application of those general principles to the particular circumstances of England and English-

[1] "The Nature and Functions of Art," etc., pp. 286, 287.
[2] Chap. ii., p. 41.
[3] Chap. iv., p. 113.

men during the middle ages, and that the same general principles applied to the particular circumstances of England and Englishmen in our day may, or rather must reproduce Gothic architecture under a somewhat different form."

And again :

"It is the letter and not the spirit of Gothic that our architects commonly study. To many of them, and, perhaps, to nearly all the unprofessional public, the essence of the style seems to consist in the use of certain definite forms; no building which is without them would be admitted to belong to the style, and no building possessing them would be excluded. Hence it is that hundreds of modern buildings which pass for Gothic, and of whose orthodoxy was never any doubt, are no more Gothic than they are Egyptian.

"Most probably this assertion will seem fanciful and overstrained; for of all styles of architecture Gothic is generally thought the most unmistakable. Many men who would not pretend to know Roman architecture from Greek, Doric from Egyptian, or Egyptian from Assyrian, have no hesitation in pronouncing a building Gothic, or not Gothic. If we take them to a modern building, and ask them what reason they have for believing it to be Gothic, they appeal to the pointed form of the arches, the tracery in the windows, the high pitch of the roofs; and they would think us unreasonable if we asked for further proof. And yet, further proof will be demanded by one who really understands Gothic architecture, and the relation in which it stands to modern society. All those forms may be present, and yet the building may be an imposture. It is quite true that ancient Gothic architecture under certain circumstances used traceried windows and pointed arches, but traceried windows and pointed arches did not make Gothic architecture then, nor will they now. Under other circumstances, even in ancient times, she discarded tracery, and used round or segmental or even elliptical arches instead of pointed ones, and nevertheless continued to be the same style. There is no lack of instances to prove this; there are many round-arched Gothic buildings of a date long after the introduction of the pointed arch, and there exist churches dating from the thirteenth century which are lighted by plain square windows without tracery and without even arched heads.

The essence of the style is not involved in the presence or absence of those forms which are popularly connected with the idea of Gothic architecture. Without the aid of historical evidence, the very nature and character of the style are enough to teach us that it must be so. Like all noble styles, the Gothic art of the middle ages took unhesitatingly whatever forms resulted naturally from the application of certain fixed principles to the varying circumstances of each case, and perhaps in no other style have the architectural forms been so elastic and variable, and so ready of accommodation to circumstances."[1]

A work recently published, entitled, "Inigo Jones and Wren, or the Rise and Decline of Modern Architecture in England," by the Rev. W. J. Loftie, will present the reader with an outside view of the present state and of the future of architecture; and although most of what this author says may be classed under two heads, viz., adulation and abuse—adulation of Wren and of Inigo Jones and his school; abuse, in a regular crescendo, of all or nearly all who have succeeded them. Occasionally we are relieved by passages either of a less flattering or less vituperative description, no doubt intended to be didactic, with some other scattered remarks which partly give us the information we seek—partly, for little is said on the future of architecture; and what Mr. Loftie has to say to the point is summed up by him in a short paragraph (p. 279):

"After many years, however, and much eloquent writing and elaborate designing, people are beginning to discover that there is a style that is neither Grecian nor Gothic, a style, too, which, unlike either, encourages a designer to be original, and desires him to go forward, and not backward, and which, though it is by no means new, does not prohibit novelty. The Palladian style is about 400 years old, yet its admirers are not obliged to build after a 400-years-old pattern. They are able to use the building appliances of the day. Without any falsification or make-believe they can employ every new invention for heating and lighting,

[1] Chap. ii., pp. 31-33.

for ventilation and sanitation.[1] The style often in this country called 'Queen Anne' is included in it, and there are other names: but Inigo Jones, Wren, and Burlington were, and acknowledged themselves to be, under the influence of Palladio rather than of Bramante or Vignola or Sansovino, or San Gallo, or any other great Italian of that time."

We understand by this that Mr. Loftie is of opinion that a national style of architecture for modern use can be manufactured out of Palladian; a style so un-English, that it is very doubtful whether it is possible for any but the bucolic mind, which naturally associates the architecture of "the Hall" with the squire, as it does that of the village church with the parson, ever to think of it but as foreign? No! we must look to native Gothic, and, in spite of Mr. Loftie, "mock Gothic"[2] is preferable to those gloomy "Palladian" mausoleum-like structures, in which the "Quality" of the last century chose to immure themselves, and which he so cordially commends.

Contrast with this Mr. Aitchison's views:[3]

"With considerable gaps there was a regular advance, at least in construction and arrangement, from Greek to mediæval times; it was left to the Italian artists of the Renaissance to start a belief that Roman architecture was perfect, and that all mankind could do was to try and restore it, with the effect that architecture has hardly moved from that day to this. Many observers have been sagacious enough to see that architecture is practically stationary, though the fashions have been constantly changing; but it was

[1] And Mr. Loftie might have added "cooking" to his list, which has exactly as much to do with the style of the clubs he refers to as the things he enumerates.

[2] Mr. Loftie forgets that it is unwise for "the pot to call the kettle black," for Palladian architecture, to use Mr. Loftie's carefully selected adjective, is mock, mock, mock-Classic. Mr. Morris calls it "an imitation of an imitation of an imitation, the result of a tradition of dull respectability, or of foolish whims without root or growth in them."

[3] Lectures on Architecture, 1894.

only quite lately that the reason, or one of the reasons, for this has been discovered—that is, that the method was wrong."

Mr. W. Morris, in "Gothic Architecture," says (p. 58):

"I want you to see that from the brief historic review of the progress of the arts it results that to-day there is only one style of architecture on which it is possible to found a true living art, which is free to adapt itself to the varying conditions of social life, climate, and so forth, and that that style is Gothic architecture."

Again (pp. 66, 67, and 68):

"And meanwhile of the world demanding architecture, what are we to do? Meanwhile? After all, is there any meanwhile? Are we not now demanding Gothic architecture and crying for the fresh New Birth? To me it seems so. It is true that the world is uglier now than it was fifty years ago; but then people thought that ugliness a desirable thing, and looked at it with complacency as a sign of civilization, which no doubt it is. Now we are no longer complacent, but are grumbling in a dim unorganized manner. We feel a loss, and unless we are very unreal and helpless we shall presently begin to try to supply that loss. Art cannot be dead so long as we feel the lack of it, I say: and though we shall probably try many roundabout ways for filling up the lack, yet we shall at last be driven into the one right way of concluding that in spite of all risks, and all losses, unhappy and slavish work must come to an end. In that day we shall take Gothic architecture by the hand, and know it for what it was and what it is."

It may startle many to find how much thought has been bestowed upon a subject which, till comparatively recent times, could not be mentioned without provoking a smile; and doubtless some will feel surprise at the mass of the evidence of which the selection here given forms but a tithe, and which certainly warrants the conclusion that we must be on the eve of a crisis. There has been no radical alteration in the style of building it is true, yet the numberless changes rung on all the forms and combinations which our ancestors invented are indicative of the seething which

has been and is, more or less imperceptibly, going on. But in the science of building great changes are at work ; materials and methods of construction are employed, without which, it is not too much to say, nineteenth century requirements could not have been met; and the construction of our buildings has practically become distinct from, and out of touch with the architecture ; indeed, if the present state of things continues much longer the engineer will construct and the architect will only case and decorate the carcase, the result being the extinction of the art of architecture.[1] We must either reject iron, or adopt it into the family of the older materials. We must give it its freedom. It has not been used fairly ; we have made it do servile work, and were ashamed of it at that. No other material has received such treatment at the hands of architects. The cry, as is here shown, is many-voiced, calling for an end to this masonic metallic medley.

In conclusion, the following quotations from Mr. Burges, Mr. Eidlitz, and M. Viollet-le-Duc are inserted ; each of these authors offers several practical and valuable suggestions on the application of imperishable coloured decoration to the exteriors of our town buildings ; suggestions which may be helpful in the solution of the crucial difficulty we should have to encounter in our metallic construction, should it ever become a *fait accompli*, namely, its artistic treatment.

In "Art Applied to Industry," Mr. Burges says :

"We must always bear one thing in mind, and that is the

[1] Fairbairn says, as though a matter of course, "the construction of fire-proof buildings is of two kinds : those entirely composed of iron, brick, or stone ; and those composed of iron beams and columns, with brick arches. The exterior walls may be formed of either material, as the conveniences of locality or circumstances may admit, but the floors, with which the present inquiry is more directly concerned, will require a separate and a more detailed description."—W. FAIRBAIRN, *The Application of Cast and Wrought-iron to Building Purposes*, p. 147.

London smoke and its attendant acids and gases: it is said that its influence extends to no less a radius than forty miles, and if we wish to counteract it, we must face our dwellings with some imperishable material which will afford no lodgment for the smoke to penetrate, and which will sustain without injury a periodical cleansing by means of a fire-engine.

"Now marble will hardly fulfil these conditions, seeing that it as a great faculty of losing its polish and getting its surface disintegrated in this climate; thus, the celebrated Marble Arch has been twice scraped and cleaned within the last fifteen years: so that marble will not do. Granite does appear to keep its polish, but then it is very expensive, and very hard to work, and not of a very pleasant colour. Stone is not very successful: if soft, it soon decays; if hard, like Portland, it gets very white in some parts and very black in others; this parti-colour I have heard poetically compared to ebony and ivory, but I am afraid that there is more ebony than ivory, and indeed we should only be too glad to dispense with it altogether. Stone cannot be cleaned except by scraping, which involves a scaffold, and cannot be often repeated; the same objection holds good with regard to brick or terra-cotta, except that when dirty it is of a much more disagreeable colour than stone. *Graffito*-plaster and paintings are all open to the same objection, viz., that of getting intensely dirty, without much power of being cleaned. We have, therefore, as far as I can see, but three courses open to us: the first is, to build the window-dressings, doors, etc. in majolica, plaster the walls between, paint them with subjects, and then cover them with large sheets of plate glass; this is the first. The second would be to supply the place of the paintings covered with glass by means of mosaics. Now these mosaics might be made in various ways: they might be of glass chopped up in the regular manner, as Signor Salviati does it; made of sticks of glass broken off short, in Mr. Fisher's manner; or they might be manufactured in earthenware and glazed. I do not think unglazed tesseræ would do, as the smoke would stain them like bricks. It is by no means necessary that these mosaics should represent subjects, although it would be a gain for them to do so; on the contrary, they might be diapers, and the tesseræ might be made like some discovered near Babylon, viz., in the shape of cones, with the bottom part glazed. Some system might also be found for making figures in

pieces of stained glass, foiling them from behind, and then embedding them in mortar or lead. Messrs. Powell, of Whitefriars, have invented something of this kind, but I am afraid that their material would be too porous for external use. We now come to majolica, which, with mosaic would, I think, solve the problem before us. It should be remembered that, thanks to Messrs. Minton and other manufacturers, we can now obtain majolica both in relief and painted; it is true that at present it is rather dear, but should an increased demand arise, it would doubtless go down in price. M. Roussel's system would give us great advantages in the pictorial part of the work, while it would rest with the manufacturers generally to give us a glaze that would not shine too much in a side light, and at the same time would stand the frost. With these advantages I really see no reason why we should not have buildings in smoky London glowing with imperishable colour, while the other processes would still be applicable in country places beyond the reach of the fumes of London. At present we are building in stone, and brick, and plaster, which we well know in a few years will be so black that no ornaments can be distinguished. With painted majolica and mosaics all this would be changed."[1]

Thus wrote Mr. Burges, and one would have expected that, when he built his own house, some attempt would have been made to embody these views. The conditions, with one exception, were favourable—an accomplished architect building for himself, and with no lack of means. The one unfavourable condition was, that glazed earthenware, used in such a manner, was not sufficiently mediæval for Mr. Burges's intense mediæval tendencies. We may well suppose that his heart and his intellect strove for the mastery, and his heart won.

Mr. Eidlitz says:[2]

"Nor is the scheme of creating a new architecture by a mere modification of old forms pregnant with the promise of success. Watt did not attempt to shape his steam-engine after the pattern

[1] "External Architectural Decorations," pp. 106, 107.

[2] "The Nature and Functions of Art," etc., pp. 473-475.

of a wind-mill, nor were early shot-guns made in the form of a cross-bow. In one respect architectural monuments resemble each other sufficiently to warrant an intimate relationship of form, viz., they are all at least temporary abodes for man, not unlike the wind-mill and the steam-engine, either of which serves as an apparatus for pumping water, and the cross-bow and the shot-gun, which are both engines of war; but these, after all, are mere physical conditions. The nature of architectural monuments changes with the idea which prompts persons to congregate within them, just as in the steam-engine and shot-gun the motive power which performs the work (steam and gunpowder) supersedes the motive force used in the wind-mill and cross-bow, which are atmospheric currents and muscular power.

". . . . The historical forms of architecture have become obsolete because the environment has changed. During four hundred years old forms have not been modified, nor have new forms been created; but the conditions surrounding architecture have changed all the same, and the gap has become too great for modification now; nothing short of re-creation will meet the case. But this re-creation must proceed upon the principle of imitation. Old architectural forms must be permitted to dissolve into their elements, which are construction, material, carved ornament, and colour decoration. These elements may be used as separate entities, as a basis of new forms. Of course, where the possibilities of construction have been increased, we must call into use this increase, and the material which has been added by modern invention must be utilized and incorporated in our architecture. We cannot boast of great progress in carved ornament and colour decoration, but we may learn to understand the application of it under a more comprehensive and better established system, and we may call to our aid in its use and application an advanced knowledge of mechanical laws and technical facilities."

M. Viollet-le-Duc asks:[1]

"Why in our palaces and mansions should we forego the use of glazed terra-cotta,—always keeping in our exteriors to stone facings, which are cold and cheerless of aspect, especially in our climate? By the judicious use of faïence, or even of painted stucco in the sheltered parts, we could effect a saving in stone

[1] "Lectures on Architecture," vol. ii., Lecture XI., p. 39.

sufficient to compensate for the extra cost occasioned by these coatings. The architects of the Renaissance in Italy, and even in France, did not hesitate to employ such appliances, which are at once decorative and economical; they respected stone sufficiently to prevent them from lavishing it uselessly."

An attempt to forecast the social condition of America in the year 2000 has been made by Mr. Bellamy in his book "Looking Backward," but as it is not given, even to the initiated, to foresee the changes which will have taken place in architecture by that time, it is no matter of surprise that his incidental references thereto are very meagre. Dr. West, in his first excursion from the home of his hospitable entertainer, to whom he is indebted for his awakening from the long hypnotized sleep into which he had been thrown, sees nothing in Boston which appears strange, if we except one or two minor matters, which concern the social and domestic arrangements of the citizens, save the enormous size of the buildings and the absence of the familiar chimneys. But to the mind of the architect what dreams of possibilities present themselves: the Gothic revival, the various adaptations of Greek and Roman architecture associated with the nineteenth century, invested with the romance which attaches to everything not of our own times; and perhaps a school of young antiquarian architects, rising into prominence, who sketch and measure our abuses of the works of our fathers, and even go so far as to incorporate them in their own works. Even the materials now in vogue may have given place to others to which we are at present strangers, or with which and with their uses we are but slightly acquainted. Some of these ardent young men, for aught we know, may even be infatuated enough in their worship of the nineteenth century to use stone and brick for their thick walls, and indulge in other vagaries, as we do now. But the generality of architects

will possibly—not to say probably—be working in a new style, which has been slowly germinating, and which fulfils all the requirements of real architecture—a vernacular style—one which has enlisted all the science as well as all the art of the day; which has pressed into its service every material capable of sustaining weight, and of offering a stubborn resistance to the destructive agencies of nature; and then of moulding these into artistic forms born of them, and, by the help of imperishable colour, giving to the world of that day an architecture that shall rival that of mediæval cities in splendour. To enter into the details of these possibilities would require the vision of a seer, but it is open to anyone to conjecture, on Mr. Bellamy's lines, what the architecture of the near future will be like. Nothing more is possible, and whatever form dreams may take, they are but dreams.

It seems advisable to give a summary or *résumé* of what has been herein advanced, in order that a definite impression as to the aim and purport of these pages may be left on the mind of the reader; and on the foundation thus laid he may rear his superstructures—castles in the air, doubtless; but the time spent upon them will not be wasted, even though no substantial results may immediately ensue.

(*a.*) That architects are not advancing with, or keeping abreast of the times, but are showing a tendency to hark back, even to the adoption of foreign styles of the past.

(*b.*) That all endeavours to *invent* a new style, as such, must be abortive. It must grow out of *something;* it is therefore submitted that all question of a new style must be subordinated to the consideration of a *new construction* which will prove to be the "something" required.

(*c.*) That, for reasons already given, metal seems likely to be the most prominent building material of the future;

and as iron is, at present, the only metal which is offered to us in sufficient quantities at reasonable cost, it is spoken of as the building material of the future, while we are looking to the potentialities of science, which may give us, on the same conditions, others more suitable and more beautiful. Aluminium, which possesses, when alloyed, many characteristics peculiarly favourable to its use in this way, has already been referred to as non-corrosive, and marvellously light, so that it could be used much as timber is used. And, if so, what would have been the timber framing of a house in the fourteenth or fifteenth century would be easy of execution in this material. Its sectional areas would probably have to be somewhat greater than those of iron, but this may be considered an advantage.[1]

(*d.*) That, in combination with this constructive material, various kinds of vitreous manufactures, mosaics, etc., or other durable and weather-resisting natural materials, such as granite or marble, should be employed as panel-filling, much in the same way as plaster, modelled, coloured, or plain, was applied to the half-timber construction above referred to, or as stained glass was used with stone in the later styles. But the use of these materials would probably be limited to towns, where they would help to minimize the necessity for repeated outside renovation and cleansing by presenting wall surfaces, upon which the smoke-laden atmosphere could leave no permanent defacement; whilst in the country, where nature has a free hand and executes her inimitable colouring in her own time and way, stone, brick, etc., might, at least for some time to come, hold their own as constructive materials, modified, as no doubt they would be, by the new methods coming in the train of the new architectural and constructive employment of metal.

[1] See page 139.

(*e.*) That, as may be inferred from (*d.*), colour will hold a prominent position.[1]

Such are the main points, but especially is it insisted that it is a new system of construction which primarily demands our attention, and having attained that, the artistic development of it will follow naturally, and the "new style" will be realized—a nineteenth or twentieth century, a "Victorian" architecture, which may rightly claim to be a lineal descendant of the national style so unfortunately brought to a halt in the sixteenth century, but neither slain nor even maimed by the vigorous attacks of the Renaissance; a victim of fickleness 'tis true, but nothing worse; and since the Italian charmer can do nothing more for us, let us return to our first love, satisfied that she, returning to purity and simplicity, will be content to cast aside the foreign garb in which she has so long been forced to masquerade, and will deck herself with new materials, so long as they demand of her no sacrifice of truth. Holding high principles, she will agree to nothing which will compromise them; but she will adapt herself to all the various requirements of modern life, and supply the architectural needs of all sorts and conditions of men: having a working dress for the warehouse, a devotional one for the church,

[1] In a notice of the Arts and Crafts Exhibition, "The Studio," November 15th, 1893, in referring to some of the exhibits says they "show a new departure in Gothic art, in their ornate employment of colour. This, which many have felt is the only legitimate development of our native architecture, is noticeable throughout the work designed for Welbeck Abbey. We all know how the various periods of 'Gothic' art grew more and more elaborate until they became extravagant and merged into the Renaissance. . . . . Colour is unquestionably a heritage of 'Gothic' architecture; new and daring innovations marked each step of its growth; so that of all styles it should be less bound to use the fossilised traditions of any definite period, and ready to assimilate the feeling of contemporary art if it be found capable of doing so."

and a robe of state for the palace, but, above all, a domestic one for the home.

With an art so complaisant, materials so applicable, and aided by science, there remains but one other requirement, which is the concentration of individual minds on the subject, from which we may hope that the reproach will be taken away from Architecture, so that she may once more walk the earth in her beauty.

Surely the extracts given, and which might have been easily multiplied, seem to testify that the subject has been long enough in the anticipatory stage, and is now only waiting for advancement into the region of actual accomplishment. Does it not then reflect upon the architects of our time that in the last decade of the nineteenth century so little real advance has been made in their art? Each one is still a law unto himself acknowledging no guidance but that of caprice. Even the builders of "Babel," whatever their delinquencies may have been, read us a lesson of definiteness of purpose and singleness of aim which our times sorely need.

It is mainly to the younger men who have the world before them that our hopes turn; they are the units of the power which must work the change. Will they fail us, or, with growing interest in, and profound enthusiasm for their profession, will they, availing themselves of the increasing possibilities of their time, so work that the advent of a new century may witness the awaking of Architecture from her protracted sleep?

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